Patent Right	Date	April 24, 2024	Court	Intellectual Property High Court, Fourth Division
	Case number	2023 (Ne) 10052, 10080, 2024 (Ne) 10002		

- A case in which the court ruled that the amount of damage can be presumed pursuant to Article 102, paragraphs (1) and (2) of the Patent Act based on the facts that the patentee engaged in the manufacturing and sale of only a component of the product in which the patent is worked, but the component is the core of the technology for the product.
- A case in which the court amended the reasonable royalty rate as calculated under Article 102, paragraph (3) of the Patent Act, which was determined as 30% in the judgment in prior instance, to 15%.

Case type: Injunction and Compensation for Damage Caused by Patent Infringement
Result: Modification of the prior instance judgment
References: Article 102, paragraphs (1) to (3) of the Patent Act
Related rights, etc.: Patent No. 3867108 and Patent No. 4601965
Judgment in prior instance: Tokyo District Court, 2018 (Wa) 28930

Summary of the Judgment

1. The Appellee, a patentee of [i] a patent for an invention titled "Laser processing device" (Patent No. 3867108) and [ii] a patent for an invention titled "Laser processing method and laser processing device" (Patent No. 4601965), filed an action against the Appellant, alleging that the manufacturing, etc. of the Appellant's Product constitutes infringement of the patent rights held by the Appellee, and seeking an injunction against the manufacturing, etc. of the Appellant's Product, disposal of the Appellant's Product, and compensation for damage.

In the judgment in prior instance, the court upheld the Appellee's claims for an injunction and disposal of the product. With regard to the Appellee's claim for compensation for damage, the court denied the applicability of Article 102, paragraphs (1) and (2) of the Patent Act on the grounds that while the Appellant's Product is a finished product (SD dicer), the product manufactured and sold by the Appellee, the patentee, is its component (SD engine), and awarded compensation for damage under paragraph (3) of the same Article up to the amount calculated by multiplying the sales amount of the Appellant's Product by the royalty rate of 30%.

Against the judgment in prior instance, the Appellant filed an appeal and the Appellee filed an incidental appeal. The Appellee's claims for an injunction and disposal were withdrawn upon the expiration of the terms of the patent rights.

In this judgment, the court determined that Article 102, paragraphs (1) and (2) of the Patent Act are also applicable based on the facts of the case, and upheld the Appellee's claim for compensation up to the amount of damage calculated pursuant to paragraph (2) of the same Article, which is the highest amount, holding as follows.

2. Determination on Article 102, paragraph (2) of the Patent Act

(1) Article 102, paragraph (2) of the Patent Act is applicable if there are circumstances based on which the patentee could have made profit had there been no act of infringement by the infringer.

(2) In the domestic market, the SD dicer is sold almost exclusively by the Appellant and Company A that receives a supply of the SD engine from the Appellee. The SD engine manufactured by the Appellee (the "Appellee's SD engine") is only a component of the SD dicer, but it is the core of the technology for the SD dicer. It is considered that in the configuration of the Appellant's Product, the part corresponding to the Appellee's SD engine embodies the essential technical feature of the SD dicer and serves as the source of competitiveness of the SD dicer.

Based on such facts, the circumstances mentioned in (1) can be found.

(3) There is no reason for enabling the Appellee, which sells the SD engine, to receive compensation for damage beyond the profit from the sales of the SD engine. It is appropriate to determine the amount of damage sustained by the Appellee to be the amount calculated by multiplying the marginal profit from the sale of the Appellant's Product ([i]) by the ratio of the price of the SD engine ([ii]) to the total price of the SD dicer ([iii]) ([i] × [ii] / [iii]), and construe that the presumption under Article 102, paragraph (2) of the Patent Act should be rebutted for the part beyond that amount.

3. Determination on Article 102, paragraph (1) of the Patent Act

(1) The "articles that the patentee or exclusive licensee (the "patentee, etc.") would have been able to sell if the infringement had not taken place" as referred to in Article 102, paragraph (1), item (i) of the Patent Act are products of the patentee, etc. the sales quantity of which would be affected by the infringement, or in other words, they are products of the same kind as the infringing products that are offered to the same consumers, and are products in a competitive relationship with the infringing products in the market in that they could have been sold or exported had there been no act of infringement by the infringer.

(2) Based on the facts mentioned in 2(2) above, it is found that the sales quantity of the

Appellee's SD engine would be affected by the infringement, and thus the competitive relationship mentioned in (1) can be found.

4. Determination on Article 102, paragraph (3) of the Patent Act

(1) The rate of royalty to be received for the working of the patented invention should be determined while taking into consideration [i] the royalty rate under the licensing agreement for the patented invention actually concluded, or if it is not known, the market rate for the royalty in the relevant industry, and also by comprehensively taking into consideration various circumstances involved in the lawsuit, including: [ii] the value of the patented invention itself, that is, the technical content and importance of the patented invention and whether it can be replaced with something else; [iii] the contribution of the patented invention to the sales and profits achieved when it is used for the product in question, and how the infringement was committed; and [iv] the competitive relationship between the patentee and the infringer and the patentee's sales policy.

(2) In the past, a certain license fee had been determined between the Appellee and the Appellant. However, as this had been based on the premise that the Appellant would manufacture and sell the SD dicer using only the Appellee's SD engine, it is inappropriate to adopt this license fee alone as the rate of royalty to be received when this premise is not satisfied. On the other hand, it is also inappropriate to adopt the profit from the Appellee's SD engine itself as the standard for the royalty rate under Article 102, paragraph (3) of the Patent Act. In addition, the Appellant and the Appellee are in a competitive relationship. Furthermore, the Appellant's Product as a whole falls within the technical scope of Corrected Invention 1, but it has some problems that need to be solved by Invention 2-2- and Invention 2-3, and the Appellee's Product partially does not fall within the technical scope of Invention 2-2 and Invention 2-3. By comprehensively taking into consideration these circumstances, in addition to the general license fee trends, it is reasonable to find that the rate of royalty to be received by the Appellee for the working of the patented inventions is 15%.

Judgment rendered on April 24, 2024
2023 (Ne) 10052, 2023 (Ne) 10080, and 2024 (Ne) 10002, Appeal case of seeking injunction against patent infringement, appeal case incidental thereto, and case of a petition under Article 260, paragraph (2) of the Code of Civil Procedure
(Court of prior instance: Tokyo District Court, 2018 (Wa) 28930)
Date of conclusion of oral argument: January 17, 2024

Judgment

Appellant of this appeal and the appellee of the incidental appeal (the defendant in the first instance)
Tokyo Seimitsu Co., Ltd.
(hereinafter referred to as the "Appellant")

Appellee of this appeal and the appellant of the incidental appeal (the plaintiff in the first instance)
Hamamatsu Photonics K.K.
(hereinafter referred to as the "Appellee")

Main text

1. Paragraphs 3 and 4 of the main text of the judgment in prior instance shall be modified as follows based on the appeal by the Appellant and the incidental appeal by the Appellee.
(1) The Appellant shall pay to the Appellee 831,916,753 yen and amounts accrued on the partial amounts thereof stated in the "Accepted amount of principal" column of Attachment 2 "List of Delay Damages" at the rates respectively stated in the "Interest rate" column of that list for the periods from the dates respectively stated in the "Start date" column of that list until the completion of the payment.
(2) The Appellee's other claims shall be dismissed.
2. The Appellee shall pay to the Appellant 794,270,202 yen and an amount accrued thereon at the rate of 3% per annum for the period from the day following the date of service of this judgment until the completion of the payment.
3. The rest of the Appellant's petition under Article 260, paragraph (2) of the Code of Civil Procedure shall be dismissed.
4. The court costs throughout the first and second instances are divided into seven parts, of which, two parts shall be borne by the Appellant and the rest shall be borne by the

Appellee.
5. This judgment may be provisionally executed with regard to Paragraph 1 (1) and Paragraph 2.
6. Paragraphs 1 and 2 of the main text of the judgment in prior instance have ceased to be valid due to withdrawal of an action therefor by the Appellee in this instance.

Facts and reasons

[Abbreviations]

Major abbreviations used in this judgment are as described in Attachment 1 "List of Abbreviations." Other abbreviations used in the judgment in prior instance are used as they are also in this judgment.

No. 1 Summary of the case

In this case, the Appellee, a patentee of Patent 1 (Patent No. 3867108) for an invention titled "Laser processing apparatus" and Patent 2 (Patent No. 4601965) for an invention titled "Laser processing method and laser processing apparatus," filed an action against the Appellant, alleging that the manufacturing, sale, etc. of the Defendant's Product by the Appellant constitutes infringement of these patent rights, and seeking compensation for damage, etc.

No. 2 Determination by the court of prior instance and filing of an appeal, etc.

1. The court of prior instance made the determinations described below, and from among the Appellee's claims in prior instance, [i] upheld the claim for an injunction and disposal under Article 100, paragraphs (1) and (2) of the Patent Act, and [ii] upheld the claim for compensation for damage (the amount of the main claim: 2.4 billion yen) up to 1,506,978,762 yen.

[Gist of the determinations by the court of prior instance]

・ The Defendant's Product (both fixed and moderate tracking) falls within the technical scope of Invention 1, Invention 2-2, and Invention 2-3.

・ The defense of patent invalidity (lack of an inventive step, violation of the support requirement, violation of the clarity requirement, etc.) and the defense of licensing relating to the Licensing Contract, raised by the Appellant, are both groundless.

・ Article 102, paragraphs (1) and (2) of the Patent Act do not apply to this case (because the SD engine sold by the Appellee corresponds to a component of the SD dicer, which is the infringing product, and is not found to be in a competitive relationship with the SD dicer in the market).

・ The amount of damage based on Article 102, paragraph (3) of the Patent Act is 1,506,978,762 yen, which is obtained by multiplying the sales amount of the infringing

products (●●●●●●●●●●●● yen) by the reasonable royalty rate of 30%, and adding the attorneys' fees of ●●●●●●.

2. In response to the judgment in prior instance, [i] the Appellant filed an appeal, dissatisfied with the part of the judgment that is against the Appellant, and also filed a petition under Article 260, paragraph (2) of the Code of Civil Procedure with regard to the Provisional Payment, whereas [ii] the Appellee filed an incidental appeal in which the Appellee added a claim regarding patent right infringing transactions to the statement of the claims, and sought a partial claim of the amount originally claimed as mentioned in 3. (3) B. below, while also limiting the scope of appeal against the judgment in prior instance to that extent. In addition, [iii] upon the expiration of the terms of the patent rights, the Appellee withdrew its claims for an injunction against manufacture and sale, etc. and disposal of the Defendant's Product, which the Appellee had sought in prior instance (the Appellant consented to the withdrawal).

3. As a result of the above, the judicial decisions sought by the parties in this instance are as follows.

(1) Gist of the appeal

A. The part of the judgment in prior instance that is against the Appellant shall be revoked.

B. The Appellee's claims regarding the abovementioned revoked part shall be dismissed.

(2) Petition under Article 260, paragraph (2) of the Code of Civil Procedure

The Appellee shall pay to the Appellant 794,758,666 yen and an amount accrued thereon at the rate of 3% per annum for the period from January 21, 2023 until the completion of the payment.

(3) Gist of the incidental appeal

A. Paragraph 3 of the main text of the judgment in prior instance shall be modified as follows.

B. The Appellant shall pay to the Appellee 2,204,501,960 yen and amounts accrued on the partial amounts thereof stated in the "Claimed amount of principal" column of Attachment 2 "List of Delay Damages" at the rates respectively stated in the "Interest rate" column of that list for the periods from the dates respectively stated in the "Start date" column of that list until the completion of the payment (the main claim is principally based on tort and alternatively based on unjust enrichment).

No. 3 Basic facts

1. Outline of the Patents

(1) Patent 1

A. The Appellee owned a patent right relating to Patent 1 described below. This patent

right lapsed on September 13, 2021 due to expiration of the term (Exhibit Ko 1).
Patent number: Patent No. 3867108
Number of claims: 1
Title of the invention: Laser processing apparatus
Filing date: March 2, 2006
Priority date: September 13, 2000
Registration date: October 13, 2006
B. Regarding the claim of Patent 1 (Claim 1), after the registration of establishment of the patent, a JPO decision on correction (final and binding) was rendered on July 2, 2018, and in the proceedings of the Invalidation Trial, a request for correction (the Correction) was filed on May 28, 2021. On November 18, 2021, a JPO decision was rendered to approve the Correction and hold the request for the Invalidation Trial to be invalid. Although litigation seeking rescission of that JPO decision was filed, a judgment dismissing the claim was rendered on November 29, 2022, and as this judgment became final and binding, the abovementioned JPO decision and the Correction became final and binding.
C. The statements of the claim (Claim 1) before and after the Correction are as described in Attachment 3, and the corrected part is the part relating to Constituent Feature F according to the division of constituent features described below.
(2) Patent 2
A. The Appellee owned a patent right relating to Patent 2 described below. This patent right lapsed on January 9, 2024 due to expiration of the term (Exhibit Ko 2).
Patent number: Patent No. 4601965
Title of the invention: Laser processing method and laser processing apparatus
Number of claims: 20
Filing date: January 9, 2004
Registration date: October 8, 2010
B. The statements of Claims 13, 15, and 16 of the claims of Patent 2 are as respectively described in 2-1, 2-2, and 2-3 in Attachment "Claims" of the judgment in prior instance.
2. Outline of the Patents
(1) Corrected Invention 1
A. Division into constituent features
A: A laser processing apparatus for forming a modified region as the starting point for cutting within a wafer-like object to be processed,
E: comprising
B: a mounting table on which the object to be processed is mounted,

C: a laser light source for emitting laser light,
D: a light-converging lens for converging the laser light emitted from the laser light source within the object to be processed mounted on the mounting table, and forming the modified region at the position of the light-converging point of the laser light, and
E: a control part having a function to move the light-converging lens by only a first movement amount in the thickness direction of the object to be processed in reference to the laser light incident surface of the object to be processed so that the light-converging point of the laser light is located within the object to be processed and move the mounting table in the direction perpendicular to the thickness direction of the object to be processed so that the light-converging point of the laser light moves along a line along which the object to be processed is to be cut, and then to move the light-converging lens by only a second movement amount in the thickness direction of the object to be processed in reference to the laser light incident surface so that the light-converging point of the laser light is located within the object to be processed and move the mounting table in the direction perpendicular to the thickness direction of the object to be processed so that the light-converging point of the laser light moves along a line along which the object to be processed is to be cut,
F: which is a laser processing apparatus characterized in that the object to be processed is a silicon wafer with no groove formed along the line along which the object is to be cut in a silicon monocrystal structure part.
B. Technical features of Corrected Invention 1

The statements of Description, etc. 1 are as described in No. 4, 1. (1) (pp. 261 onward) of the "Facts and reasons" section of the judgment in prior instance, and from these, it is found that Corrected Invention 1 discloses the following.
(A) Corrected Invention 1 relates to a laser processing apparatus used for cutting objects to be processed such as semiconductor material substrates, piezoelectric material substrates, and glass substrates ([0001]).
(B) A method of using laser for cutting also melts surroundings of the region to become the cutting part in the surface of the object to be processed. Therefore, in the case where the object to be processed is a semiconductor wafer, semiconductor devices located near the abovementioned region among those formed in the surface of the semiconductor wafer might melt. To deal with this, there were cutting methods whereby the part to be cut in the object to be processed is heated with laser light, and then the object is cooled, so as to generate a thermal shock in the part to be cut. Nevertheless, the relevant methods contained such problems as that, when the thermal shock generated in the object to be processed is large, unnecessary fractures such as those deviating from lines

to be cut, etc. may occur in the surface of the object to be processed, and when the object to be processed is a semiconductor wafer, semiconductor chips may be damaged ([0002] to [0004]).
(C) It is an object of Corrected Invention 1 to provide a laser processing apparatus which generates no unnecessary fractures in the surface of an object to be processed and does not melt the surface ([0005]).
(D) Corrected Invention 1 adopts the configuration of Claim 1 in order to achieve the abovementioned objective. In Corrected Invention 1, the object to be processed can be cut with a relatively small force by using a modified region formed within the object to be processed by irradiating the object with laser light as the starting point, whereby the object can be cut without generating unnecessary fractures deviating from the line along which the object is to be cut. Laser light is hardly absorbed by the surface of the object to be processed, whereby the surface of the object will not melt. As it is possible to increase the number of positions to become starting points when cutting the object to be processed, the object to be processed can be cut even in such case as where the object to be processed has a relatively large thickness and the like ([0007] to [0012]).
(2) Invention 2
A. Division into constituent features
(Invention 2-1)
I: A laser processing apparatus for irradiating an object to be processed with a first laser light while locating the light-converging point within the object to be processed, and forming a modified region within the object to be processed along a line along which the object to be processed is to be cut,
N: comprising
J: a lens for converging the first laser light and second laser light for measuring displacement of the main surface of the object to be processed toward the object to be processed,
K: displacement acquiring means for acquiring the displacement of the main surface by detecting reflected light reflected by the main surface in response to irradiation with the second laser light,
L: moving means for moving the object to be processed and the lens along the main surface of the object to be processed,
M: holding means for holding the lens such that the lens freely advances and retracts with respect to the main surface, and
N: control means for controlling respective behaviors of the moving means and the holding means,

S: which is a laser processing apparatus
O: wherein, while emitting the second laser light, the control means controls the moving means so as to move the object to be processed and the lens relative to each other along the main surface, and the displacement acquiring means acquires the displacement of the main surface along the line along which the object is to be cut,
P: wherein, while emitting the first laser light, the control means controls the holding means so as to hold the lens while adjusting a gap between the lens and the main surface according to the displacement acquired by the displacement acquiring means, and controls the moving means so as to move the lens and the object to be processed relative to each other along the main surface, thereby forming the modified region,
Q: wherein the control means controls the holding means so as to hold the lens at a measurement initial position set such that the light-converging point of the second laser light is located at a predetermined position with respect to the object to be processed,
R: wherein, while starting the emission of the second laser light with the lens being held at the measurement initial position, the control means controls the moving means so as to move the lens and the object to be processed relative to each other along the main surface, and controls the holding means so as to release the lens from being held at the measurement initial position in response to the reflected light of the second laser light reflected by the main surface; and
S: wherein, after the release, the control means controls the holding means so as to adjust the gap between the lens and the main surface while detecting the reflected light of the second laser light reflected by the main surface, and the displacement acquiring means acquires the displacement of the main surface along the line along which the object is to be cut.
(Invention 2-2)
2I: A laser processing apparatus for irradiating an object to be processed with a first laser light while locating the light-converging point within the object to be processed, and forming a modified region within the object to be processed along a line along which the object to be processed is to be cut,
2N: comprising
2J: a lens for converging the first laser light and second laser light for measuring displacement of the main surface of the object to be processed toward the object to be processed,
2K: displacement acquiring means for acquiring the displacement of the main surface by detecting reflected light reflected by the main surface in response to irradiation with the second laser light,

2L: moving means for moving the object to be processed and the lens along the main surface of the object to be processed,
2M: holding means for holding the lens such that the lens freely advances and retracts with respect to the main surface, and
2N: control means for controlling respective behaviors of the moving means and the holding means,
2S: which is a laser processing apparatus
2O: wherein, while emitting the second laser light, the control means controls the moving means so as to move the object to be processed and the lens relative to each other along the main surface, and the displacement acquiring means acquires the displacement of the main surface along the line along which the object is to be cut,
2P: wherein, while emitting the first laser light, the control means controls the holding means so as to hold the lens while adjusting a gap between the lens and the main surface according to the displacement acquired by the displacement acquiring means, and controls the moving means so as to move the lens and the object to be processed relative to each other along the main surface, thereby forming the modified region,
2Q: wherein the control means controls the holding means so as to set a processing initial position for holding the lens with respect to the main surface according to the displacement of the main surface along the line along which the object is to be cut acquired by the displacement acquiring means, and hold the lens at thus set processing initial position,
2R: wherein, while starting the emission of the first laser light with the lens being held at the processing initial position, the control means controls the moving means so as to move the lens and the object to be processed relative to each other, thereby forming the modified region in one end part of the line along which the object is to be cut, and
2S: wherein, after forming the modified region in the one end part, the control means controls the holding means so as to release the lens from being held at the processing initial position and adjust the gap between the lens and the object to be processed according to the displacement of the main surface acquired by the displacement acquiring means, and controls the moving means so as to move the lens and the object to be processed relative to each other, thereby forming the modified region.
(Invention 2-3)
3J: A laser processing apparatus according to any of Claims 10 to 15,
3I: wherein the displacement acquiring means emits the first laser light when acquiring the displacement of the main surface along the line along which the object is to be cut, so as to form the modified region along the line along which the object is to be cut.

B. Technical features of Invention 2

The statements of Description, etc. 2 are as described in No. 4, 8. (1) (pp. 309 onward) of the "Facts and reasons" section of the judgment in prior instance, and from these, it is found that Invention 2 discloses the following.

(A) Invention 2 relates to a laser processing apparatus for processing an object to be processed by irradiating the object with laser light ([0001]).

(B) Known as a conventional laser processing technique was one in which measurement means for measuring the main surface height of the object to be processed is arranged in parallel with a condenser lens for converging the laser light for processing the object to be processed with a predetermined gap therebetween. However, there was a problem that, as measurement is started from a position on the outside of the object to be processed, proceeding to the inside thereof, when the condenser lens is driven according to the measured value of main surface height obtained by this measurement, the light-converging point of the laser light may deviate in end parts of the object to be processed ([0002], [0004]). Known as a technique for processing an object to be processed whose main surface has irregularities, on the other hand, was one in which the planarity in the whole part to be processed is measured by planarity measuring means as a preparation for processing and then, with a blade replacing the planarity measuring means, the object is processed according to thus measured planarity. However, there was a problem that respective means used for measuring and processing must be exchanged, which takes time and labor and may generate a deviation due to the exchange ([0003], [0005]).

(C) It is an object of Invention 2 to efficiently perform laser processing while minimizing the deviation of the light-converging point of the laser light ([0006]).

(D) Invention 2 adopts the configurations of Claims 13, 15, and 16 to achieve the abovementioned objective. By adopting the configuration of Claim 13, it is possible to release the lens from being held after detecting the end part, acquire the displacement of the main surface of the object to be processed, and then form a modified region within the object to be processed with the same lens according to the acquired displacement. Therefore, the displacement can be acquired while excluding the influence of fluctuations in the shape of end parts in the object to be processed as much as possible. By adopting the configuration of Claim 15, it is possible to form a modified region in the one end part of the line along which the object is to be cut while holding the lens at the processing initial position, and then form the modified region while the lens is released from being held and caused to follow the displacement of the main surface. Therefore, the displacement can be acquired while excluding the influence of fluctuations in the shape of end parts in the object to be processed as much as possible.

By adopting the configuration of Claim 16, the apparatus forms the modified region while acquiring the displacement of the main surface at the same time, whereby a single scan can perform the measurement and processing of the main surface ([0015], [0016], and [0018] to [0020]).

3. Outline, etc. of the parties and the Defendant's Product

The basic facts regarding these points are as described in No. 2, 3. (1) (p. 19) and (4) to (8) (p. 24 to p. 44) of the "Facts and reasons" section of the judgment in prior instance, and therefore they are cited herein. However, the following explanations in No. 2, 3. (8) C. (C) a. (p. 41) concerning "Specific control details of the moderate tracking Auto Focus (AF) method" are deleted, also in light of what was pointed out by the Appellant in the statement of the grounds for appeal: "meanwhile, the laser for processing is not irradiated in this section" (No. 2, 3. (8) C. (C) a. [i]); and "(meanwhile, the laser for processing is not irradiated in the edge processed section)" (No. 2, 3. (8) C. (C) a. [ii]).

No. 4 Issues and the parties' arguments

1. Issues

The Appellant withdrew the defense of patent invalidity concerning Patent 1 that the Appellant had raised in prior instance (the same as the ground for invalidation that was rejected by the final and binding JPO decision in the Invalidation Trial), and the Appellee withdrew the claim for an injunction and disposal. In addition, the Appellant filed a petition under Article 260, paragraph (2) of the Code of Civil Procedure in this instance. As a result, the issues in this instance are as follows (Issue 3 [Defense of patent invalidity concerning Patent 1] and Issue 8 [Necessity of an injunction] in prior instance were dropped from the issues, and Issue 9 has been newly added).

(1) Whether the Defendant's Product falls within the technical scope of Corrected Invention 1 (Issue 1)

In prior instance, the question of whether or not the Defendant's Product falls within the technical scope was discussed on the premise of the statements of the claim before the Correction, but the disputed constituent feature was not subject to the Correction, and no elements were found in the abovementioned discussion that would have been affected by the Correction. Therefore, when citing the parties' arguments and determinations by the court of prior instance from the judgment in prior instance concerning Issue 1, they are cited by deeming that they are premised on Corrected Invention 1.

A. Whether the Defendant's Product can be regarded to form a "modified region" (Constituent Features A and D) (Issue 1-1)

B. Whether the Defendant's Product can be regarded to form a modified region "at the position of the light-converging point" (Constituent Feature D) (Issue 1-2)
C. Whether the laser processed region of the Defendant's Product can be regarded to serve as "the starting point for cutting" (Constituent Feature A) (Issue 1-3)
D. Whether the Defendant's Product can be regarded to be "having a function to move the light-converging lens" (Constituent Feature E) (Issue 1-4)
E. Whether the Defendant's Product can be regarded to be "having a function to ... move the light-converging lens by only a second movement amount in the thickness direction of the object to be processed in reference to the laser light incident surface" (Constituent Feature E) (Issue 1-5)
F. Whether the Defendant's Product can be regarded to comprise a "control part" (Constituent Feature E) (Issue 1-6)
(2) Whether the Defendant's Product falls within the technical scope of Invention 2 (Issue 2)
A. Whether the Defendant's Product can be regarded to "hold the lens at a measurement initial position" (Constituent Feature Q) and to "hold the lens at ... processing initial position" (Constituent Feature 2Q) (in relation to Inventions 2-1 and 2-2) (Issue 2-1)
B. Whether the Defendant's Product can be regarded to be "starting the emission of the second laser light with the lens being held at the measurement initial position" (Constituent Feature R) (in relation to Invention 2-1) (Issue 2-2)
C. Whether the Defendant's Product can be regarded to "release the lens from being held at the measurement initial position in response to the reflected light of the second laser light" (Constituent Feature R), and that the control means of the Defendant's Product, "after the release, controls the holding means so as to adjust the gap between the lens and the main surface" (Constituent Feature S) (in relation to Invention 2-1) (Issue 2-3)
D. Whether the Defendant's Product can be regarded to be "forming the modified region in one end part of the line along which the object is to be cut" (Constituent Feature 2R), and, "after forming the modified region in the one end part, ... to release the lens from being held at the processing initial position" (Constituent Feature 2S) (in relation to Invention 2-2) (Issue 2-4)
E. Whether the Defendant's Product can be regarded to form a "modified region" (Constituent Features I, P, 2I, 2P, 2R, 2S, and 3I) (in relation to Invention 2 as a whole) (Issue 2-5)
F. Whether the Defendant's Product has a "control means" (Constituent Features N to S, and 2N to 2S) (in relation to Inventions 2-1 and 2-2) (Issue 2-6)

(3) Whether it is found that Patent 2 should be invalidated by a trial for patent invalidation (Issue 4)
A. Violation of the support requirement 1 (in relation to Invention 2 as a whole) (Issue 4-1)
B. Violation of the support requirement 2 (in relation to Invention 2 as a whole) (Issue 4-2)
C. Violation of the clarity requirement (in relation to Invention 2 as a whole) (Issue 4-3)
(4) Whether the Licensing Contract exists (Issue 5)
(5) Amount of damage sustained by the Plaintiff (Issue 6)
A. Amount of damage, etc. based on Article 102, paragraph (2) of the Patent Act (Issue 6-1)
(A) Whether Article 102, paragraph (2) of the Patent Act is applicable (Issue 6-1-1)
(B) Amount of damage based on Article 102, paragraph (2) of the Patent Act (Issue 6-1-2)
B. Amount of damage, etc. based on Article 102, paragraph (1) of the Patent Act (Issue 6-2)
(A) Whether Article 102, paragraph (1) of the Patent Act is applicable (Issue 6-2-1)
(B) Amount of damage based on Article 102, paragraph (1) of the Patent Act (Issue 6-2-2)
C. Amount of damage based on Article 102, paragraph (3) of the Patent Act (Issue 6-3)
D. Whether compensation for damage not based on presumptive provisions exists and amount of damage (Issue 6-4)
(6) Whether unjust enrichment exists and amount of unjust enrichment (Issue 7)
(7) Whether the amount to be returned based on Article 260, paragraph (2) of the Code of Civil Procedure should be subject to delay damages accrued from the date of receipt of that amount (Issue 9)

No. 5 Summary of the court decision (regarding infringement)
1. Regarding Issue 1 (Whether the Defendant's Product falls within the technical scope of Corrected Invention 1)

This court determines that the Defendant's Product falls within the technical scope of Corrected Invention 1 for the same reasons as those for which the court of prior instance made the determination based on Invention 1 (before the Correction). Other than additional determinations made on the Appellant's supplementary arguments in this instance as stated below, the reasons are as described in No. 4, 2. to 7. (p. 269 to p. 309)

of the "Facts and reasons" section of the judgment in prior instance, and therefore they are cited herein.

(1) Regarding Issue 1-1 (formation of the "modified region" referred to in Constituent Features A and D)

A. On the premise that, in silicon processed by using the Defendant's Product, the region surrounding the void and the region above the void are separated by a monocrystalline silicon region, and therefore they should be separately examined as to whether they constitute a "molten processed region," the Appellant argues that even if a modified region exists in the region surrounding the void in the silicon processed by using the Defendant's Product, it is a dislocated part which does not serve as the starting point for cutting, which exists in the region above the void, and which remains to be a monocrystal structure.

However, as the essence of Corrected Invention 1 is to be able to form a modified region within an object to be processed by irradiating the object with laser light while locating the light-converging point within the object to be processed, it is not reasonable to understand a modified region formed by single laser light irradiation as a divided region. In addition, according to Exhibit Ko 31, it is found that a laser processed region formed within a silicon wafer by using the Defendant's Product has a high dislocation region, which serves as the starting point for cutting, and the parties do not dispute this fact. Therefore, it is sufficient to examine whether or not this high dislocation region is a molten processed region.

Description, etc. 1 defines a molten processed region in [0027] as follows: "The molten processed region refers to at least one of a region once melted and then re-solidified, a region in a melted state, and a region in the process of re-solidifying from its melted state. The molten processed region may also be defined as a phase-changed region or a region having changed its crystal structure. The molten processed region may also be regarded as a region in which a certain structure has changed into another structure in monocrystal, amorphous, and polycrystal structures. Namely, it refers to a region in which a monocrystal structure has changed into an amorphous structure, a region in which a monocrystal structure has changed into a polycrystal structure, and a region in which a monocrystal structure has changed into a structure including an amorphous structure and a polycrystal structure, for example. When the object to be processed is a silicon monocrystal structure, the molten processed region is an amorphous silicon structure, for example." ([0027]). Therefore, it should be examined whether the high dislocation region constitutes any of these.

It is understood from Exhibit Ko 33 (Fig. 15, etc.) that a void and a high dislocation

density layer above it are formed within the range where the laser is irradiated and that the part above the void partly melts, re-solidifies, and polycrystallizes, and it is understood from Exhibits Ko 32 and 96 (Figure. 4, etc.) that the area within the laser focus image lines becomes a molten region and that the upper molten region ultimately separated from the void space is high density, cannot completely recrystallize, and leaves a part of the molten region amorphous. Further, Exhibit Ko 76-2 (Fig. 2, etc.) is found to provide knowledge that, when recrystallizing all parts adjacent to a void, molten silicon becomes enclosed in recrystallized silicon, and the enclosed molten silicon region transforms into a higher density solid region (a disordered region), generating mechanical strain/stress and forming cracks. Then, as a result of processing the silicon wafer by stealth dicing, a polycrystallized region and an amorphous region will be formed above the void through partial melting and re-solidification, and the molten silicon enclosed in recrystallized silicon re-solidifies, becoming a high dislocation density layer and the starting point for cutting.

As found in No. 4, 2. (2) of the "Facts and reasons" section of the judgment in prior instance, in a laser processed region formed within silicon by using the Defendant's Product, a silicon monocrystal structure is mainly maintained, but amorphous structures are found to exist in some parts. In addition, in light of the abovementioned knowledge, it is found that not completely recrystallized, high density molten silicon enclosed in polycrystallized silicon re-solidifies to form a high dislocation layer, and serves as the starting point for cutting. It can be said that the region above the void including amorphous structures is a region in which a monocrystal structure has changed into a structure including an amorphous structure and a polycrystal structure, and therefore it constitutes a molten processed region.

The Appellant argues that the starting point for cutting in silicon processed by using the Defendant's Product is the dislocated part, which remains to be a monocrystal structure and does not constitute a region having changed its crystal structure. However, even if the dislocated part is a monocrystal structure, based on the abovementioned knowledge, there is no contradiction in considering that the part had once melted and then re-solidified. Meanwhile, as stated in No. 4, 2. (2) I. (A) of the "Facts and reasons" section of the judgment in prior instance, silicon has a phenomenon called epitaxial growth where a region in contact with a monocrystal once melts and then re-solidifies, and there is no contradiction even if dislocation occurs in a region that has been re-solidified due to epitaxial growth in laser processing that causes a rapid rise and fall of temperature in a short period like that performed by using the Defendant's Product. Further, the dislocated part is located within a molten processed region, which is a

region in which a monocrystal structure has changed into a structure including an amorphous structure and a polycrystal structure. Therefore, there are no obstacles to find that the dislocated part is the starting point for cutting.

B. The Appellant submitted Exhibit Otsu 447, arguing that the void formed by using the Defendant's Product is formed not by melting, but by coulomb explosion. However, as long as the starting point for cutting is the dislocated part and not the void, Exhibit Otsu 447 cannot be regarded as evidence that directly relates to the discussion on whether Constituent Features A and D are fulfilled. Also, even if it is viewed from the aspect of whether melting has occurred, Exhibit Otsu 447 is based on a simulation performed in a study on focused femtosecond laser processing of sapphire (Al_2O_3), and given that processing by femtosecond laser (which is called non-thermal processing) and processing by nanosecond laser differ in their processing results (Exhibits Ko 80, 81, 95, etc.), and that there is no sufficient evidence to find that the phenomenon caused by focused femtosecond laser processing of sapphire and the phenomenon caused by focused nanosecond laser processing of silicon can be considered to be the same, Exhibit Otsu 447 is insufficient for supporting the Appellant's argument.

In addition, the Appellant submitted Exhibit Otsu 455, arguing that, in response to the Appellant's question about the principle of formation of a modified layer, Professor *a* clearly explained that, in a modified layer, the temperature becomes high in a solid state, which causes increased pressure inside and pulling from the surroundings, leading to occurrence of slips and generation of cracks, and also that a void is not melting but is generated as a result of atoms that existed at the position of the void being pushed into the surroundings. However, Exhibit Otsu 455 contains simple communications as follows: "2, From what temperature does the high temperature range start? 2000K–"; "Please give us a review of the principle of modified layer formation, and please explain thermal shock once again. ⇒ We consider that the temperature becomes high in a solid state, which causes increased pressure inside and tension in the surroundings (up to two pulses before), leading to occurrence of slips and generation of cracks."; and "Is the void melting? ⇒ Not melting. Ablation is occurring. Atoms that existed at the position of the void are pushed into the surroundings. Interstitial." As the object to be processed is not specified and it is unclear what is meant by "up to two pulses before," Exhibit Otsu 455 is insufficient for supporting the Appellant's arguments.

C. The Appellant argues that, according to the results of an experiment and analysis newly conducted by the Appellant (Exhibit Otsu 452), a laser processed region formed by using the Defendant's Product is not amorphous or polycrystalline, but is solely composed of a monocrystal. However, as Exhibit Otsu 452 shows that only a

monocrystal was observed on a single observation surface, it is not sufficient as a basis for construing that a laser processed region formed by using the Defendant's Product is not amorphous or polycrystalline, but is solely composed of a monocrystal.

The Appellant submitted a written opinion, Exhibit Otsu 453, stating that even if a small amount of polycrystalline or amorphous structures were found, possible mechanisms of phase transition to polycrystalline or amorphous structures include not only re-solidification after melting, but also pressure-induced transition. The written opinion states as follows: "even if p-Si or a-Si were detected from Tokyo Seimitsu's sample, it is not possible to distinguish whether they were pressure-induced or they were generated due to rapid solidification after melting, so it cannot be said that rapid solidification after melting occurred based on their existence"; and "if we are to assume that melting has not occurred, it is reasonable to consider that pressure-induced phase transition from monocrystal Si to p-Si or a-Si took place" (p. 1 to p. 2). The written opinion did not go as far as to confirm that melting has not occurred, but merely indicated pressure-induced transition as a possibility in the case of assuming that melting has not occurred.

D. The Appellant submitted Exhibit Otsu 446, and argues that silicon atoms of the void have not contributed to the formation of the region above the void, because the void and the region above the void are formed in places physically separated by a gap, and also because the region above the void is formed irrespective of whether the void is formed.

However, Exhibit Otsu 446 shows that "using two silicon wafers bonded together to form a gap of approximately 2 μm at the interface as a sample, the laser was irradiated by setting the light-converging point in the lower wafer (B) at a location near the interface" (p. 3). Therefore, there can be a case where reflected light would occur at the interface between the two silicon wafers, and as for the distribution of the laser light, the laser light would be irradiated so that the focus of the reflected light and the direct light would overlap near the back surface of the silicon wafer (A), and the focus of the direct light would be located near the top surface of the silicon wafer (B). In that case, the processing will be thermal processing of the surface (interface) of a silicon wafer, unlike the processing by using the Defendant's Product whereby a laser processed region will be formed "within" a silicon wafer, and therefore, it is not necessarily appropriate as an analysis of a laser processed region formed by using the Defendant's Product.

(2) Regarding Issue 1-5 (the function to "move the light-converging lens" in Constituent Feature E)

A. Constituent Feature E of Corrected Invention 1 reads "comprising" "a control part having a function to move the light-converging lens by only a first movement amount in the thickness direction of the object to be processed in reference to the laser light incident surface of the object to be processed so that the light-converging point of the laser light is located within the object to be processed and move the mounting table in the direction perpendicular to the thickness direction of the object to be processed so that the light-converging point of the laser light moves along a line along which the object to be processed is to be cut, and then to move the light-converging lens by only a second movement amount in the thickness direction of the object to be processed in reference to the laser light incident surface so that the light-converging point of the laser light is located within the object to be processed and move the mounting table in the direction perpendicular to the thickness direction of the object to be processed so that the light-converging point of the laser light moves along a line along which the object to be processed is to be cut."

The Appellant argues that, by setting the position of the modified region in reference to the laser light incident surface, the modified region can securely be formed within the wafer even if the wafer is warped or uneven, and it is possible to solve the problem which Corrected Invention 1 aims to solve. However, unlike Description, etc. 2, Description, etc. 1 does not mention the warping or unevenness of the wafer as problems. Rather, the figures of Description, etc. 1 illustrate an object to be processed with no warping or unevenness. Therefore, the Appellant's argument cannot be accepted.

In addition, while Constituent Feature E provides that the light-converging lens is to be moved by a first movement amount or a second movement amount in the thickness direction "in reference to the laser light incident surface," it does not specify in any way the direction of the movement (upward or downward) or the starting point of the movement.

B. In the application process for Patent 1, the Appellee responded to a notice of grounds for rejection based on Article 39, paragraph (2) of the Patent Act (applications claiming identical inventions) by making an amendment to the effect that the first movement amount and the second movement amount are to be in reference to the "laser light incident surface." In a written opinion (Exhibit Otsu 458-1) submitted concurrently with the amendment, the Appellee stated that the invention pertaining to the application for Patent 1 differs from the invention pertaining to another application filed on the same date in that "in the invention relating to Claim 1 of the present application, the first movement amount and the second movement amount in the thickness direction of the object to be processed are in reference to the laser light incident surface of the object

to be processed, whereas in the invention relating to Claim 1 of the other application filed on the same date, the first movement amount and the second movement amount in the thickness direction of the object to be processed are in reference to a predetermined position." On this basis, the Appellee further stated as follows in the written opinion: "As the reference for the first movement amount and the second movement amount in the invention relating to Claim 1 of the present application is the laser light incident surface of the object to be processed, it is a more specific concept than the reference for the first movement amount and the second movement amount in the invention relating to Claim 1 of the other application filed on the same date, which is a predetermined position. When forming a modified region within a wafer-like object to be processed, the modified region is formed at a position that is only a predetermined distance inner from the laser light incident surface of the object to be processed. In this case, according to the invention relating to Claim 1 of the present application, the laser light incident surface will be used as a reference, so it is possible to form the modified region at a position that is only a predetermined distance inner from the laser light incident surface more accurately than in the case of using a predetermined position other than the laser light incident surface as a reference."

On this basis, the Appellant states that an apparatus that forms a second row of modified region in reference to a predetermined position other than the laser light incident surface is not included in the technical scope of Corrected Invention 1, and argues that the Defendant's Product does not fulfill Constituent Feature E, because when performing the second row of processing, the laser processing engine unit is moved to a position that is closer to the main surface of the silicon wafer by only a second movement amount "from the position where the first row of AF tracking laser processing was performed," and the laser processing engine unit is not moved in reference to the main surface of the silicon wafer.

However, while the movement by the second movement amount is, directly, in reference to the position where the first row of laser processing was performed, that position itself was decided in reference to the main surface of the silicon wafer. Therefore, it can be said that the movement by the second movement amount is also decided in reference to the main surface of the silicon wafer as a result, as explained in the judgment in prior instance, and the application process for Patent 1 indicated by the Appellant does not affect this.

C. The Appellant argues that, when a laser dicing apparatus performs AF tracking control, as in the case of the Defendant's Product, particularly when assuming a case where the object to be processed is warped, a misalignment occurs between the position

where the light-converging lens moves by a first movement amount in reference to the "laser light incident surface," which is the starting position of the first row of processing, and the position where the light-converging lens ends the first row of processing and moves to the second row of processing, and as a result, the position where the light-converging lens moves by a second movement amount to the position for the second row of processing, in reference to the position of the first row of processing, will also be misaligned with the position where the light-converging lens moves by a second movement amount in reference to the "laser light incident surface."

However, Corrected Invention 1 does not specify in any way whether the object to be processed is warped or uneven, or during processing, whether the position of the light-converging lens in the thickness direction fluctuates from the position reached after moving by a first movement amount or a second movement amount, and rather, it presents drawings of an object with no warping or unevenness. In light of these, as mentioned in B. above, there is no obstacle to construing that Corrected Invention 1 widely includes cases where the movement by a second movement amount is indirectly decided in reference to the main surface of the silicon wafer, and there is no reason to exclude the case where AF tracking control is performed.

Thus, the Appellant's abovementioned argument does not serve as a ground for the Defendant's Product not fulfilling Constituent Feature E.

2. Regarding Issue 2 (Whether the Defendant's Product falls within the technical scope of Invention 2)

(1) Regarding whether the Defendant's Product falls within the technical scope of Invention 2-1

Like the court of prior instance, this court determines that the Defendant's Product does not fall within the technical scope of Invention 2-1. Other than additional determinations made on the Appellee's supplementary arguments in this instance as stated below, the reasons are as described in No. 4, 11. (concerning Issue 2-3; pp. 331 onward) of the "Facts and reasons" section of the judgment in prior instance, and therefore they are cited herein.

A. The Appellee argues that the court of prior instance erred in construing the requirement in Constituent Feature R, which is "to release the lens from being held at the measurement initial position in response to the reflected light of ... laser light," as meaning "to immediately release 'the lens from being held at the measurement initial position' at the point of time when the total quantity of reflected light exceeds a threshold," and that it is reasonable to construe the requirement as meaning "to release 'the lens from being held at the measurement initial position' after it is detected from

the reflected light of the laser light that the lens (the irradiation position of the second laser light) reached the object to be processed."

However, Description, etc. 2 states as follows: "Since the quantity of reflected light varies depending on the distance from the reflecting surface, the lens can be released from being held assuming that a part where the quantity of the reflected light undergoes a predetermined change corresponds to an outer edge of the main surface of the object to be processed, for example" ([0010]); "The rangefinding laser light L2 is reflected less by the dicing film 2a so that the total quantity of light reflected thereby is smaller, whereas the total quantity of reflected light increases in the object to be processed S. Namely, the total quantity of reflected light of the rangefinding laser light L2 detected by the four-divided position detecting device in the light-receiving part 45 (see FIG. 1) increases, whereby it can be determined that the processing objective lens 42 is located at a position intersecting the line C1 along which the object to be processed S is to be cut when the total quantity of reflected light exceeds a predetermined threshold. Therefore, when the total light quantity detected by the four-divided position detecting device in the light-receiving part 45 (see FIG. 1) becomes greater than the predetermined threshold, the processing objective lens 42 is assumed to be located at one end of the line C1 along which the object is to be cut, and expansion amount control of the actuator 43 is started so as to release the expansion amount of the actuator 43 from being held at that time, such that the astigmatism signal becomes the reference value (first measurement step)" ([0045]); and "According to the signal outputted from the light-receiving part 45, the end part determiner 705 of the control unit 7 determines whether the processing objective lens 42 reached an end part of the object to be processed S or not (step S06). When it is determined that the processing objective lens 42 reached an end part of the object to be processed S, the end part determiner 705 outputs an instruction signal to the actuator controller 703 so as to make the latter start the expansion/contraction of the actuator 43 and output a control signal such that the astigmatism signal equals the held reference value" ([0055]). In particular, given the statement "when ... becomes greater than the predetermined threshold, the processing objective lens 42 is assumed to be located at one end of the line C1 along which the object to be processed ... is to be cut, ... so as to release the expansion amount of the actuator 43 from being held at that time" in [0045], Invention 2-1 cannot be understood to premise a time interval between the point of time when the total quantity of reflected light exceeds a threshold and the release of the lens from being held.

B. The Appellee argues that, even based on the interpretation by the court of prior instance, the Defendant's Product can also set the edge processed section to 0 mm,

which means "to immediately release 'the lens from being held at the measurement initial position' at the point of time when the total quantity of reflected light exceeds a threshold." As the grounds for which the abovementioned setting is possible, the Appellee mentions the following: the Appellee's argument that "the Defendant's Product can also set the edge processed section to 0 mm" has clearly been undisputed; the chart ([Chart 3]) on p. 101 of the judgment in prior instance shows an example of moving the Defendant's Product while setting the edge processed section to 0 mm as "standard AF"; and Exhibit Ko 211 also confirms that the Defendant's Product can set the edge processed section to 0 mm.

However, considering that the Appellant is disputing the credibility of Exhibit Ko 211, it is clear that the Appellant is disputing the argument that the Defendant's Product can set the edge processed section to 0 mm.

In addition, while the chart ([Chart 3]) on p. 101 of the judgment in prior instance shows "standard AF," it is based on the Appellant's experiment results submitted as Exhibit Otsu 67. Exhibit Otsu 67 states that the experiment was conducted by using ML300EX, but it is unknown whether this is a product of the Appellant that was sold to customers.

Further, although Exhibit Ko 211 states that the edge processed section could be set to 0 mm, it does not attach any objective materials, such as a photograph of the graphical user interface (GUI) screen of the Defendant's Product.

Thus, it should be said that there is no sufficient evidence to find that the Defendant's Product can set the edge processed section to 0 mm.

C. As stated above, the Defendant's Product, both its fixed and moderate tracking types, does not fulfill Constituent Features R and S, so without having to make determinations on the other points, the Defendant's Product does not fall within the technical scope of Invention 2-1.

(2) Regarding whether the Defendant's Product (fixed type) falls within the technical scope of Inventions 2-2 and 2-3

Like the court of prior instance, this court determines that the Defendant's Product (fixed type) falls within the technical scope of Inventions 2-2 and 2-3. Other than additional determinations made on the Appellant's supplementary arguments in this instance as stated below, the reasons are as described in No. 4, 9. (concerning Issue 2-1; pp. 322 onward), 12. (1) (concerning the Defendant's Product [fixed type] in Issue 2-4; pp. 338 onward), 13. (concerning Issue 2-5; pp. 346 onward), and 14. (concerning Issue 2-6; pp. 347 onward) of the "Facts and reasons" section of the judgment in prior instance, and therefore they are cited herein.

A. Concerning Issue 2-1

The Appellant argues that the Defendant's Product does not fulfill Constituent Feature 2Q of Invention 2-2, because while the Defendant's Product can be divided into five categories by processing method and object, none of them has been sold by setting a program to perform control based on a light quantity reference when the object to be processed is a wafer with a beveled main surface. All categories perform moderate tracking control based on a coordinate reference, and no "holding" is performed at the measurement initial position, and therefore they do not have a configuration of being "held" at the "measurement initial position."

However, what the Appellant argues are merely problems relating to differences in the object to be processed and the mode of use and the setting of programs on the part of users, and not those relating to specific configurations of the Defendant's Product. In determining fulfillment of the constituent feature, the question should be whether or not the Defendant's Product has a function to apply a light quantity reference to a beveled silicon wafer, as explained in the judgment in prior instance.

The Appellee argues that, in the Defendant's Product, the processing conditions can be set or changed (including choosing between a light quantity reference and a coordinate reference) by setting or changing parameters via GUI. The Appellant has not disputed this point, and rather, the Appellant has recognized that, with regard to the Defendant's Product (moderate tracking type) delivered to Samsung Electronics Co., Ltd. (hereinafter referred to as "Samsung"), engineers of the Appellant or its related overseas subsidiary sometimes test the crack growth amount based on a light quantity reference, and that there is potentiality that customers may change the setting after delivery (No. 4, 3. (3) [Appellant's argument] B. and (14) [Appellant's argument] C. above).

Moreover, all models of the Defendant's Product specified in "Configuration [iv]" on p. 2 of Attachment 2 and in "Configuration [iv]" on pp. 19, 26, 33, 39, and 45 of Attachment 3-[i] to [v] of the statement of the grounds for appeal (3) corrected by the Appellant through the written correction dated May 15, 2023 have means to irradiate laser light for measuring distance and to detect its reflected light quantity.

As stated above, there is no error in the judgment in prior instance in largely dividing the Defendant's Product into the Defendant's Product (fixed type) and the Defendant's Product (moderate tracking type), and determining that the latter fulfills Constituent Feature 2Q in the case of using a light quantity reference. The Appellant's argument cannot be accepted.

B. Concerning Issue 2-6

According to the basic facts, the Defendant's Product has, as indicated in Constituent Features [vii], [x], and [xi], a drive mechanism that moves the cutting table in the X-axis direction, a drive mechanism that moves the laser processing engine in the Z-axis direction, and a mechanism that holds the objective lens via a piezo actuator, and as indicated in Constituent Feature [xii], these drive mechanisms and the piezo actuator are controlled by the computer system of the Defendant's Product, so the Defendant's Product has "control means" (Constituent Feature 2N).

The Appellant's supplementary argument regarding this point is that it cannot be said that Invention 2 has the "control means" relating to that constituent feature due to the reason that it does not fulfill the other constituent features that have already been determined, but this supplementary argument cannot be accepted in terms of its premise.

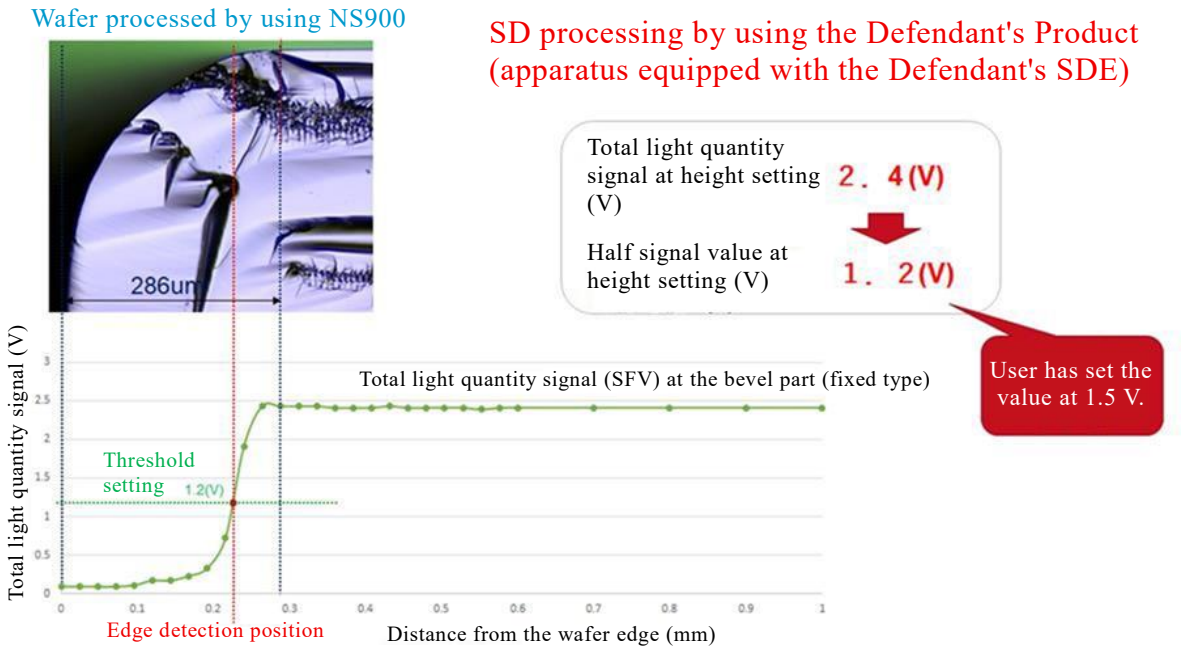
(3) Regarding whether the Defendant's Product (moderate tracking type) falls within the technical scope of Inventions 2-2 and 2-3

Unlike the court of prior instance, this court determines that the Defendant's Product (moderate tracking type) does not fall under the technical scope of Inventions 2-2 and 2-3. The reasons are as follows (concerning Issues 2-4 and 2-5). Meanwhile, the Defendant's Product (moderate tracking type) falls under the technical scope of Corrected Invention 1, as mentioned above, but it is worth discussing this point further because it serves as a premise for the Defendant's argument to the effect that a part of the units of the Defendant's Product sold (in Nos. ●● and ●●) become non-infringing due to expiration of the term of Patent 1 (No. 4, 3. (11) [Appellant's argument] A. above) (see No. 6, 2. (1) B. and C. below), and also because it may affect the reasonable royalty rate under Article 102, paragraph (3) of the Patent Act.

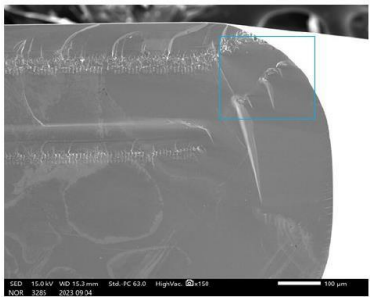
A. In this instance, there is a question of whether the Defendant's Product (moderate tracking type) satisfies "forming the modified region in one end part of the line along which the object is to be cut" in Constituent Feature 2R and "forming the modified region" in Constituent Features 2S and 3I when processing a beveled silicon wafer.

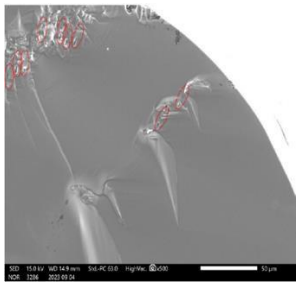
B. The Appellee submitted Exhibit Ko 216-1, stating that, with regard to a beveled silicon wafer, the Appellee actually measured the total light quantity voltage value (the voltage value output from all light-receiving elements [photodiodes] of the AF sensor that receives the reflected light of laser light for measuring distance) of the actual silicon wafer itself in the case of performing stealth dicing processing by using the Defendant's Product (moderate tracking type) and a light quantity reference and turning off the edge-off function, and as a result, a part of the modified region in the bevel part was formed by laser light for processing irradiated before the edge detection. On page 8 of its PowerPoint file, the following photograph is shown; it relates to NS900, which

is a model of the Defendant's Product (fixed type). Other photographs relate to the "Defendant's previous product," that is, an SD dicer equipped with the Appellee's SD engine, and are insufficient for proving the state of processing performed by using the Defendant's Product.



However, when looking at the photograph, in what is alleged by the Appellee to be a modified region, the part of the region to the left of the edge detection position (the bevel part) clearly differs in appearance from the part of the region formed to the right of the edge detection position (the flat part) (multiple vertical streaks of modified traces are formed horizontally within the wafer). In other words, the topmost part is seen to be exposed to the surface of the bevel part, and the lower part connected to it is hollow. Nothing else exists in the bevel part that suggests the existence of the modified region. The Appellee submitted Exhibit Ko 216-2, stating that it contains enlarged photographs of Exhibit Ko 216-1 taken by a scanning electron microscope (SEM). The Appellee argues that, as voids are observed at red-enclosed parts in the enlarged photograph of the blue-framed part, "a modified region formed within the object to be processed" is being formed. However, the blue-framed part on the left and the enlarged photograph on the right have different aspect ratios, and it is unclear whether the traces of the seven red-enclosed parts shown at upper left of the enlarged photograph on the right were formed before the wafer edge was detected.





In addition, when the Appellant used a test model having equivalent performance as the Defendant's Product (moderate tracking type) and performed processing of a beveled object to be processed along the line along which the object is to be cut at ●●● μm and ●● μm from the top surface of the main surface (processing depths), by setting a light quantity reference and turning off the edge-off function, at both processing depths, the light was focused so that the light-converging point was located at a predetermined position within the object to be processed, and the modified layer was formed after the wafer edge was detected based on a light quantity reference and the moderate tracking AF started, and at the bevel part, there were only hollow processing traces that led to the top surface (Exhibit Otsu 500). In addition, the Appellee argues that there is a problem in the fact that there are only two processing depths, ●●● μm and ●●● μm, in Exhibit Otsu 500. However, as there is a meaning in conducting an experiment with two actual examples with significantly different processing depths, and also the Appellant argues that the processing depth ●● μm is the processing condition for ●●●●●● and the processing depth ●●● μm is the processing condition for ●●●●●, and there is no sufficient evidence to doubt this, the Appellee's argument cannot be accepted.

C. The reason that the position and nature of the modified region formed by laser processing differ between the bevel part and the flat part when using the Defendant's Product (moderate tracking type) is construed to be because the position of the light-converging point differs between the case where the surface on which the light refracts is curved and the case where it is flat.

According to Exhibit Otsu 102 (OHMURA Etsuji et al., "Internal Modification of Ultra Thin Silicon Wafer by Permeable Pulse Laser," *Journal of the Japan Society for Precision Engineering*, Vol. 74, No. 3, 2008), when laser energy was absorbed at the top surface of the wafer, ablation occurred, and while it is a separate phenomenon from stealth dicing that forms a modified region within the object to be processed, a modified layer was formed within the silicon wafer and ablation occurred at the top surface of

the silicon wafer when the focus depth was 15 nm, and ablation occurred at the top surface of the silicon wafer when the focus depth was 0 nm. As it is natural that ablation occurs if the focus depth of the laser comes close to the bevel top surface in the bevel region at the edge of the wafer, it is reasonable to consider that the part where processing traces are seen to be exposed to the top surface and the hollow part that follows in Exhibit Ko 216-1 and Exhibit Otsu 500 are not modified regions formed inside, but ablation.

D. While Invention 2-2 assumes "forming a modified region within the object to be processed" (Constituent Feature 2I), what is formed at the bevel part when stealth dicing processing is performed by using the Defendant's Product (moderate tracking type) is a hollow region that is exposed to the outside, and it is reasonable to find that this is ablation, which is regarded to be separate from a modified region. In light of this, it should be said that the Defendant's Product (moderate tracking type) does not form a "modified region" as referred to in Constituent Features 2R and 2S of Invention 2-2, and therefore does not fulfill these constituent features.

E. Then, the Defendant's Product (moderate tracking type) does not fulfill Constituent Features 2R, 2S, and 3I, so without having to make determinations on the other points, the Defendant's Product does not fall within the technical scope of Inventions 2-2 and 2-3.

3. Regarding Issue 4 (the defense of patent invalidity concerning Patent 2)

Like the court of prior instance, this court determines that none of the defenses of patent invalidity concerning Patent 2 are valid. The reasons are as described in No. 4, 27. to 29. of the "Facts and reasons" section of the judgment in prior instance (concerning Issues 4-1, 4-2, and 4-3; p. 443 to p. 445), and therefore they are cited herein.

4. Regarding Issue 5 (Whether the Licensing Contract exists)

Like the court of prior instance, this court determines that the defense of licensing based on the Licensing Contract is invalid. Other than additional determinations made on the Appellant's supplementary arguments in this instance as stated below, the reasons are as described in No. 4, 30. (pp. 445 onward) of the "Facts and reasons" section of the judgment in prior instance, and therefore they are cited herein.

(1) The Appellant argues that the contents of the Licensing Contract do not change in any way the following contents of the Licensing Contract: the Appellee delivers the SD engine to the Appellant for a charge, and the Appellant manufactures and sells the SD apparatus (Article 3); the Appellant pays royalties to the Appellee (Article 4); and the term of contract is one year, and unless the Appellee or the Appellant requests

modification or cancellation in writing by three months prior to expiration of the term, the contract is renewed every year under the same conditions (Article 6). However, it is clear that the contents of the Licensing Contract relating to the Appellant's argument change the basic framework that the Appellee licenses the working of the inventions relating to stealth dicing for which the Appellee holds patent rights to the Appellant, on the premise that the Appellee sells the SD engine manufactured by the Appellee (the "Appellee's SD engine") to the Appellant for a charge, and the Appellant pays royalties to the Appellee.

In addition, the Appellant argues that, at the time when negotiations were held on the Licensing Contract, the Appellant was facing a sharp decline in the sales of the SD dicer equipped with the Appellee's SD engine, so it did not infringe the Appellee's interest in any way even if the Appellee tentatively allowed manufacture and sale of the SD dicer equipped with the Appellant's SD engine until sales would be recovered through the launch of the apparatus equipped with the Appellee's engine, which was to be jointly developed by the Appellant and the Appellee. However, even though such argument on the background could become an issue in determining whether there were circumstances for the Appellee to accept conclusion of the Licensing Contract, it does not serve as a ground for non-existence of the change or revision of the contents of the contract itself.

(2) The Appellant argues that, as a "written contract or any other document," a document certifying matching of manifestation of intentions between the parties is sufficient, and that there are no legal grounds that forbid the use of a form on which one party's name is printed or that forbid handwritten preparation.

However, the question here is not a general academic theory of whether a document is required for formation of a contract, and if so, what kind of document format is required. The question is, in the case where large companies with stated capitals of 34,928,648,325 yen (the Appellee) and 10,575,351,513 yen (the Appellant; both based on certificates of qualification in prior instance) prepared a written contract and concluded a contract on business alliance (hereinafter referred to as the "Business Alliance Contract"), and the contract expressly states that a "written contract or any other document" is required for making a change to the contract, whether it is assumed that the document for making a change would be prepared by being "handwritten on a memo sheet with a company name on it," which is apparently not used for important documents for external use, such as written contracts, in normal cases. Thus, the Appellant's argument has not correctly construed the judgment in prior instance.

(3) The Appellant makes various arguments, stating that it can be understood from

statements in the minutes dated October 8, 2014 (hereinafter referred to as the "Minutes") and other information that definite manifestation of intentions on the Licensing Contract was made, but none of the arguments are acceptable.

First, the Appellant argues that it is clear from the statement "also in order to retain customers" in the Minutes that the product subject to the Licensing Contract is the SD dicing apparatus equipped with the SD engine manufactured by the Appellant and that the purchasers are the Appellant's customers. However, due to their nature, minutes cannot be regarded as a document for stating a final agreement, and also, the argument itself does not specify the target product and purchasers sufficiently.

In addition, the Appellant argues that the amount of royalty is ●●●● yen per unit as stated in the e-mail dated June 11, 2012 (Exhibit Otsu 19), based on the statement "the same royalty as before will be paid" in the minutes dated October 23, 2014 (Exhibit Ko 59). However, it is normally unthinkable for the royalty, which is a core element in determining whether or not to conclude a licensing contract, to be decided on a later date.

Furthermore, the Appellant argues that the time when the Licensing Contract ends, which is until a "good laser engine" is developed, was not ambiguous between the parties, and that, in the joint development conducted between the parties under the Licensing Contract, the Appellant specifically presented criteria to be met by the engine they were to jointly develop. However, the statement in the Minutes reads "Hamamatsu Photonics and Acct will create a better laser. If a high-performance laser is created, that laser will be mounted and commercialized at that point of time." Although it is a statement about joint development, it cannot be understood to indicate the term of licensing for inventions. Moreover, the license term is also important when determining whether or not to grant a license for inventions, and it is normally unthinkable for the license term to be specifically decided after concluding a licensing contract. There is also no sufficient evidence to find that the criteria proposed by the Appellant ex-post facto were a common understanding between the Appellant and the Appellee.

(4) The Appellant argues as follows: the Appellee's internal report (Exhibit Ko 60) on the meeting held on March 25, 2015, when it was decided that the first sample apparatus of an apparatus equipped with the Appellant's engine would be delivered to Samsung, indicates that the Licensing Contract was concluded; the email dated March 30 containing statements including "If the apparatus is ordered and sold" "⇒ You will pay a separate royalty, and we will send you a royalty sticker (plate)" indicates that a license was granted for not only one sample apparatus for Samsung, but for apparatus equipped with the Appellant's SD engine as a whole, or at least, a license was granted for products

for Samsung in general; and also when Department Director *e* and others visited the Appellant on June 29, 2015, the Appellant explained its sales activities targeting Texas Instruments (TI), but they did not object.

However, in light of the statements [redacted] in Exhibit Ko 60, it is clear that Exhibit Ko 60 only assumes delivery of a sample to Samsung, and the processing in the case where it becomes sold, and that no agreement was reached on other matters, and the e-mail dated March 30 was also sent in line with it, so it is natural to understand that the e-mail relates to one apparatus to be delivered as a sample.

In addition, Department Director *e* visited the Appellant on June 29, 2015 in order to verify the truth about the information they obtained that the Appellant was presenting the apparatus equipped with the Appellant's engine to TI, and it is reasonable to see that Department Director *e* took the trouble of visiting the Appellant because the Appellant's sales activities targeting TI was an unexpected situation. Also, the Appellant's side explained to Department Director *e* that [redacted] (Exhibit Ko 62), so it is not unreasonable for the Appellee's side to have pursued no further. Rather, the statement [redacted] in Exhibit Ko 62 indicates that, at that point of time, working of Patented Inventions 1, 2-2, and 2-3 was not licensed (allowed) with respect to the SD dicing apparatus equipped with the Appellant's SD engine, except for the abovementioned delivery of a sample to Samsung.

(5) The Appellant argues that, when the Business Alliance Contract terminates, the Licensing Contract also naturally terminates, but units of the Defendant's Product for which orders were placed before the termination of the Business Alliance Contract do not constitute infringing products. However, as the Licensing Contract is not found to have been concluded in the first place, this argument is inappropriate.

No. 6 Summary of the court decision (regarding damage)

Unlike the court of prior instance, this court considers that, although application of Article 102, paragraphs (1) and (2) of the Patent Act is not denied also in this case, the reasonable royalty rate of 30% applied by the court of prior instance with regard to Article 102, paragraph (3) of the Act is too high. On this premise, this court determines that the claim for compensation for damage should be upheld up to 831,916,753 yen of damage awarded under paragraph (2) of that Article, also in consideration of the

addition to the statement of the claims (infringing transactions) in this instance. The reasons are as follows.

1. Regarding Issue 6-2-1 (Whether Article 102, paragraph (2) of the Patent Act is applicable)

(1) Under the principle of the Civil Code, in order to seek compensation for damage incurred by the patentee due to patent right infringement, the patentee must allege and prove the occurrence and amount of damage and the causal relationship between that damage and the act of patent right infringement, but the proving, etc. is difficult, and as a result, an inconvenience could occur where reasonable compensation for damage would not be provided. In light of this, Article 102, paragraph (2) of the Patent Act reduces the difficulty of proving by stipulating that, if the infringer has profited from the infringement, the amount of that profit is presumed to be the value of damage.

In other words, that paragraph is only presumptive provisions for damage, and even if application of that provision is approved, the infringer's total amount of profit is not automatically found to be the damage. If circumstances that overturn the presumption are proved even for a part of the reasonable causal relationship between the infringer's amount of profit and the patentee's amount of damage, it should be allowed to rebut the presumption in part or in certain proportion, and it is possible to apply reasonable interpretation by such flexible technique. In light of this point, it should be said that there is no reasonable reason to make the requirements for applying that paragraph particularly strict. It should be construed that Article 102, paragraph (2) of the Patent Act is applicable if there are circumstances based on which the patentee could have made profit had there been no act of infringement by the infringer. It should be said that, when applying that paragraph, the working of the patented invention by the patentee is not required (see the abovementioned judgment of the Intellectual Property High Court, February 1, 2013 [the waste storage device case]; the judgment of the Intellectual Property High Court, February 28, 2020 [the beauty instrument case]; and the judgment of the Intellectual Property High Court, October 20, 2022 [the chair-type massage machine case]).

(2) In this case, the actual state of transactions to be taken into consideration in examining whether the patentee has circumstances based on which the patentee could have made profit had there been no act of infringement by the infringer is as follows.

A. The Appellee's business model (Exhibits Ko 131 to 135 and 143)

(A) Regarding the manufacture of the SD engine set, which is a core unit of the stealth dicing technology the Appellee developed, the Appellee has made in-house manufacturing essential, and has not granted any manufacturing license. In this manner,

the Appellee monopolizes the manufacture and sale of the SD engine set, uses the sales profit from it to finance the funds for next research and development, and conducts research and development of advanced technologies.
(B) The Appellee licenses its SD technology-related patents, including the Patents, to SD dicer manufacturers (alliance partners) that are in business alliance relationships with it, and the licensee SD dicer manufacturers, as conditions for the licensing, pay royalties to the Appellee as well as purchase the Appellee's SD engine from the Appellee, incorporate it into SD dicers they manufacture and sell.

In this way, the Appellee has concluded license contracts with SD dicer manufacturers and implemented its business by positioning the purchase of its SD engine and the payment of royalties for the patented inventions relating to SD technology-related patents (including the Patent Rights; the same applies hereinafter) as conditions inseparable from the licensing to SD dicer manufacturers.
(C) The Appellee, as an SD engine manufacturer, positions profit from sale of the SD engine as the primary consideration in a license contract, so the Appellee does not license its SD technology-related patents to an SD manufacturer that does not purchase the SD engine from the Appellee. In addition, as royalties under a license contract are a secondary consideration, the standard license rate was set at ●% of the final selling price per unit.
B. Market of SD dicers
(A) Domestic SD dicer manufacturers that have received a license for silicon stealth dicing technology 1 from the Appellee are limited to the Appellant and Disco Corporation (Disco), and these two are in a competitive relationship. Even today, Disco has a license from the Appellee and purchases the Appellee's SD engine. As with the Business Alliance Contract, the license to Disco is also granted on a premise that Disco purchases the Appellee's SD engine (Exhibits Ko 131 to 135).

Meanwhile, there are multiple overseas SD dicer manufacturers that have received a license, including EO Technics Co., Ltd. (EO) (Exhibit Otsu 156), but their sales figures as of the time of the infringement are unclear.
(B) In the SD dicer market, Samsung is the largest consumer. From around 2008 to around 2011, Samsung had purchased SD dicers only from the Appellant, but from 2011 onward, it came to purchase SD dicers not only from the Appellant, but also from EO.

As Disco subsequently started to sell an SD dicer equipped with the Appellee's engine, at one point, Samsung started to purchase SD dicers only from Disco and EO, without purchasing from the Appellant.

Then, from 2016, when the Appellant began to manufacture and sell an SD dicer

equipped with the Appellant's SD engine, Samsung purchased SD dicers only from the Appellant and Disco. The Appellant has sold a total of ●● units of SD dicers to Samsung to date. The cause for Samsung to stop handling EO's products was ●●● ●●●●●●●●●●●●●●●●●●●●●●●●●●●●●●.

As it becomes difficult to control the manufacturer if manufacturing equipment is purchased only from a specific manufacturer, Samsung adopts a policy to purchase from two companies also for SD dicers (Exhibits Ko 141 and 144, and Exhibit Otsu 291).

(C) Of the number of units of the Defendant's Product sold, ●● units were sold to TI. TI highly evaluates the Defendant's Product, but has not purchased SD engines from the Appellee thus far (Exhibit Ko 142).

C. Relationship between the Appellee and Disco

In 2006, the Appellee and Disco concluded a business alliance contract and started joint development of Disco's SD dicer using the Plaintiff's SD technology. In 2007, they developed DFL7340 (for 200 mm diameter wafers) and DFL7360 (for 300 m diameter wafers), which are SD dicers equipped with the Appellee's SD engine.

Since then, the Appellee has supplied the Appellee's SD engine to Disco based on the abovementioned business alliance contract, and has granted a comprehensive license to Disco for the SD dicer equipped with the SD engine and the business use thereof by its customers.

In response, Disco has manufactured an SD dicer equipped with the Appellee's SD engine, and has sold it to semiconductor manufacturers, etc. which are end users.

Further, Disco has clarified that its products are equipped with the Appellee's SD engine by externally publicizing that it is an alliance partner of the Appellee, and by indicating the SDE mark on its SD dicer (Exhibits Ko 131 to 136).

(3) Examination will be made by taking into account the circumstances above.

Domestic manufacturers of SD dicers are limited to the Appellant and Disco that receives a supply of the SD engine from the Appellee.

Although the sales figures of overseas manufacturers, such as EO, are unclear, given that Samsung stopped transactions with EO after patent right infringement was pointed out by the Appellee, market entry by competitive manufacturers is presumed to be considerably limited, though not impossible.

Then, it is found that stealth dicers are sold mostly by the Appellant and Disco above.

Additionally, in this case, it can be said that the Appellee's SD engine constitutes the core of the technology for Corrected Invention 1 and Inventions 2-2 and 2-3, and also constitutes the core of the technology for the Defendant's Product, which is their infringing product. Then, it is considered that in the configuration of the Appellant's

Product, the part corresponding to the Appellee's SD engine embodies the essential technical feature of the stealth dicer products and serves as the source of competitiveness of the products.

In this way, in the domestic market, stealth dicers are sold almost exclusively by the Appellant and Disco that receives a supply of the SD engine from the Appellee. Also, the Appellee's SD engine itself is only a component of stealth dicer products, but it is the core of the technology for stealth dicer products, and it is considered that in the configuration of the Defendant's Product, the part corresponding to the Appellee's SD engine embodies the essential technical feature of stealth dicer products and serves as the source of competitiveness of the products. In light of these facts, it should be said that circumstances based on which the patentee could have made profit had there been no act of infringement by the infringer are found in this case.

Put in another way, as argued by the Appellee, the finished product produced by using the component sold by the patentee and the finished product sold by the infringer compete for profit in the same finished product market, and as far as the market profit for the part corresponding to the component in the finished product market is concerned, it can also be said that the patentee's act of selling the component is indirectly in a competitive relationship with the act of transferring the infringing product (finished product) via the act of producing or the act of transferring the finished product that uses the component.

(4) The Appellant argues that the judgment of the Intellectual Property High Court, October 20, 2022 (the chair-type massage machine case) was rendered on a basis that the presumption under Article 102, paragraph (2) of the Patent Act is justified only if the patentee was exporting or selling "competing products" of the "same kind" offered to the "same consumers," that is, "products in ... a competitive relationship ... in the market." However, it is only that the case relating to that judgment was a case as indicated by the Appellant, and the judgment does not go so far as to hold that Article 102, paragraph (2) of the Patent Act is not applied to other types of cases.

The Appellant argues that the Defendant's Product has various functions other than the laser irradiation function, and that none of the customers of the Defendant's Product buy the SD engine instead of the SD dicer, but although this could be a circumstance for rebutting presumption, it would not be a reason for denying that the patentee has circumstances based on which the patentee could have made profit had there been no act of infringement by the infringer.

In addition, the Appellant argues that it is unreasonable to presume the profit made by selling the Defendant's Product to be the damage incurred by the Appellee pursuant

to Article 102, paragraph (2) of the Patent Act, due to the price difference between the Appellee's SD engine and the Defendant's Product. However, this argument cannot be accepted because it is possible to appropriately reflect the fact that the Appellee's SD engine is a component of the SD dicer as a ground for rebuttal.

(5) As stated above, it should be said that Article 102, paragraph (2) of the Patent Act is applicable in this case.

2. Regarding Issue 6-1-2 (Amount of damage based on Article 102, paragraph (2) of the Patent Act)

(1) Regarding the sale of the target Defendant's Product

There is no dispute between the parties that a total of [redacted] units of the Defendant's Product were sold between March 2016 and June 2022 at the prices indicated in yellow cells in Attachment 4 "List" (Exhibit Otsu 527) (hereinafter, the sales of individual units of the Defendant's Product are indicated by the codes shown in the "No." column of that table).

There is a dispute over whether Nos. 1, [redacted] from among these sales constitute an act of infringement subject to compensation for damage.

A. Regarding No. 1

In No. 1, the unit was delivered as a sample to Samsung, and the defense of licensing (individual agreement) is found to be valid for it.

Other than additional determinations made on the Appellee's supplementary arguments in this instance as stated below, the reasons are as described in No. 4, 33. (2) A. and B. (p. 472 and p. 474) of the "Facts and reasons" section of the judgment in prior instance, and therefore they are cited herein.

(A) The Appellee argues that granting a license for No. 1 is inconsistent with the agreement under the Business Alliance Contract that the Appellee sells the SD engine to the Appellant for a charge and then the Appellant sells the SD dicing apparatus equipped with the SD engine to end users, and that a written contract signed by the signatories is required to change this.

However, the internal report on the meeting held on March 25, 2015, when it was decided that the first sample apparatus of an apparatus equipped with the Appellant's engine would be delivered to Samsung, (Exhibit Ko 60) contains statements such as the following: [redacted]

●●●● and "As it is only delivery of a sample this time, can the royalty be paid at the point of time when the product is to be sold?" In addition, the e-mail dated March 30 (Exhibit Otsu 20) states that payment of the royalty is unnecessary only for the delivery of the sample this time, and when the apparatus is ordered and is to be sold, separate payment of the royalty will be necessary. Further, the minutes of negotiations held on October 21, 2016 (Exhibit Ko 151; prepared by the Appellee) also show that Acting Department Director *f* of the Appellee has made the following statement: ●●●. If so, it can be said that there was also a premise between the Appellant and the Appellee that the Appellant would deliver one unit of the SD dicer equipped with the Appellant's SD engine to Samsung as a sample, and if the Appellant receives an order, the Appellant would sell the SD dicer. Additionally, it is found to have been common recognition between the Appellant and the Appellee that, because the sample is only one unit, it does not concern the fundamentals of the Business Alliance Contract. Therefore, the Appellee's argument cannot be accepted.

(B) The Appellee argues that it is problematic that the sample apparatus itself was returned, and Defendant's Product in No. 1 was newly delivered. However, as far as the product sold is only one unit, no substantial reason can be found to limit the target of the license only to the sample apparatus itself, so the Appellee's argument cannot be accepted.

B. Regarding No. ●●

(A) Regarding No. ●●, the following process is found (Exhibits Otsu 508 to 515).

February 2021: ●●● placed an order with the Appellant.

August 31, 2021: The product was completed.

September 13, 2021: The term of Patent 1 expired.

November 11, 2021: The Appellant's overseas subsidiary placed an order with the Appellant.

November 26, 2021: The Appellant delivered the product to the Appellant's overseas subsidiary at Yokohama Port.

January 18, 2022: ●●● placed an order with the Appellant's overseas subsidiary.

January 25, 2022: ●●● cancelled the order placed with the Appellant.

February 2022: The Appellant's overseas subsidiary delivered the product to ●●●.

March 14, 2022: ●●● paid the price to the Appellant's overseas subsidiary.

June 22, 2022: The Appellant's overseas subsidiary paid the price to the Appellant.

(B) The Appellant argues that the Appellant's act of receiving an order from ●●● in February 2021 was cancelled on January 25, 2022, and that act is retroactively deemed

to have never existed due to the retroactive effect of cancellation, so from among the acts conducted by September 13, 2021, which is during the term of Patent 1, only manufacturing constitutes infringement of Patent Right 1 (because the unit subject to No. ●● is the Defendant's Product [moderate tracking type] and does not infringe Patent Right 2).

However, a product that has been manufactured or offered to be transferred within the term of the patent right infringes the patent right, so even if the product is transferred after the term of the patent right, the market opportunities which the patentee lost due to the transfer could be regarded as damage that has a reasonable causal relationship with the act of infringement within the term of the patent. In that case, it should be said that the profit made by the infringer is included in "the amount of that profit" "if the infringer has profited from the infringement" as referred to in Article 102, paragraph (2) of the Patent Act.

According to Exhibit Otsu 379, in No. ●●, the unit was initially planned to be delivered on May 5, 2021, which is within the term of Patent Right 1, but due to the confusion in the semiconductor production environment, etc. caused by the global COVID-19 pandemic, the customer requested postponement of the delivery date, and in order to ensure that the unit can be delivered on the date designated by the customer without being affected by the confusion in distribution associated with the COVID-19 pandemic, the order placed with the Appellant by ●●● was cancelled, and the commercial distribution was changed to the Appellant → the Appellant's overseas subsidiary → ●●●. If so, in No. ●●, the Defendant's Product was originally planned to be delivered within the term of Patent Right 1, and evaluated as a whole, there is no change in the fact that it is substantially a transaction between the Appellant and ●●●. As the Appellant has also collected the price via the Appellant's overseas subsidiary, the fact that the order placed with the Appellant by ●●● was cancelled cannot be deemed to be particularly important.

Therefore, the act of infringement (offer for transfer and manufacturing) subject to compensation for damage is found for No. ●●.

C. Regarding No. ●●

(A) Regarding No. ●●, the following process is found (Exhibits Otsu 379, 510, 511, and 518 to 522).

February or March 2021: ●●● placed an order with the Appellant.

September 13, 2021: The term of Patent 1 expired.

October 15, 2021: The product was completed.

November 11, 2021: The Appellant's overseas subsidiary placed an order with the

Appellant.
November 26, 2021: The Appellant delivered the product to the Appellant's overseas subsidiary at Yokohama Port.
May 27, 2022: ●●● placed an order with the Appellant's overseas subsidiary.
May 29, 2022: ●●● cancelled the order placed with the Appellant.
June 2022: The Appellant's overseas subsidiary delivered the product to ●●●.
July 14, 2022: ●●● paid the price to the Appellant's overseas subsidiary.
July 22, 2022: The Appellant's overseas subsidiary paid the price to the Appellant.
(B) The Appellant argues that none of the acts conducted with regard to No.●● constitutes patent right infringement as an act of working the invention relating to Patent 1. However, as long as an order was placed by ●●● for No. ●● in February or March 2021, it should be said that the Appellant had made an offer for sale to ●●● before this, or that, after ●●● placed an order, the Appellant manifested its intention to ●●● to accept the order, and it is presumed that an offer for transfer was made. The fact that an individual period has not been alleged or proved does not mean that the evidence is insufficient.

A product manufactured or offered to be transferred within the term of the patent right infringes the patent right, so even if the product is transferred after the term of the patent right, the market opportunities which the patentee lost due to the transfer could be regarded as damage that has a reasonable causal relationship with the act of infringement within the term of the patent, as mentioned in B. above.

According to Exhibit Otsu 379, in No. ●●, the unit was planned to be delivered by the Appellant to ●●● along with the unit of No. ●● on May 15, 2021, which is within the term of Patent Right 1, the fact that the delivery date was postponed and the commercial distribution was formally changed due to a coincidental ex-post facto circumstance of avoiding confusion in distribution associated with the COVID-19 pandemic is the same as in the case of No. ●●, and the Appellant has collected the price via the Appellant's overseas subsidiary. Therefore, the act of infringement (offer for transfer) subject to compensation for damage is found for No. ●●.
(2) Regarding the expenses to be deducted

In this case, there is a dispute over whether the sales commissions, variable sales costs, and prototype manufacturing/improvement costs constitute expenses to be deducted.
A. Regarding the sales commissions

According to Exhibit Otsu 524, these costs are found to have been actually paid for sales promotion and customer support, and it is reasonable to find them to be expenses.

The Appellee argues that it is unclear whether these payments are for the Appellant's related company and whether they are directly required for the product release. However, given that sales commissions are being stated by specifying the product names, and that they have not occurred in the case where the purchaser is the Appellant's related company (the lower sections of 99B and 100A in Exhibit Otsu 528; they correspond to Nos. ●● and ●●, in light of their relevant periods), sales commissions are found to have substance.

B. Regarding the variable sales costs

According to Exhibit Otsu 331, these costs were calculated based on the proportion of infringing products in the laser dicing apparatuses sold during the relevant half year, and although there are no individual forms, there is nothing particularly unnatural about them.

Next, when the appropriateness of deducting as expenses is examined for each expense item, variable sales costs-1 are transportation charges paid and packaging costs, and in light of their nature, they are found to be costs that became additionally required in direct association with the sale of the Defendant's Product.

On the other hand, variable sales costs-2 are advertising costs and sales promotion costs, and as their individual association with the sale of the Defendant's Product has not necessarily been proven, it is not considered appropriate to deduct them as expenses.

C. Regarding prototype manufacturing/improvement costs

Prototype manufacturing/improvement costs cannot be found to be expenses with regard to the already manufactured Defendant's Product.

The Appellant argues that constant prototyping and improvement are necessary for continuous sales, but even if it is so, it cannot be said that prototype manufacturing/improvement costs are costs that became additionally required in direct association with the sale of the Defendant's Product.

(3) Marginal profit

When the marginal profit is obtained for each term based on Exhibit Otsu 528 on the above premise by deducting the direct costs, sales commissions, and variable sales costs-1 from the sales amount, and the marginal profit ratio is obtained as the ratio of the marginal profit thus obtained to the sales amount, the result is as shown in the "Marginal profit ratio" column of Attachment 5 "Marginal Profit Statement" (rounded to the nearest two decimal places).

(4) Rebuttal of presumption

In light of the purpose of Article 102, paragraph (2) of the Patent Act to ease the difficulty of proof, it is reasonable to construe that the amount of profit made by the

infringer by the act of infringement as prescribed in that paragraph is, in principle, the total amount of profit made by the infringer, and that the presumption under that paragraph extends to such total amount of profit. Indeed, as the above provisions are presumptive provisions, it can be said that, if the infringer's side alleges or proves that all or part of the profit made by the infringer lacks a reasonable causal relationship with the damage incurred by the patentee, the abovementioned presumption will be rebutted to that extent.

A. In this case, what the Appellee manufactures is the SD engine, which is a component of the SD dicer, and there is no dispute over the fact that the presumption under Article 102, paragraph (2) of the Patent Act should be rebutted in this respect.

In addition, there is no reason for enabling the Appellee, which sells the SD engine, to receive compensation for damage beyond the profit from the sale of the SD engine. In this case, it is appropriate to determine the amount of damage sustained by the Appellee to be the amount calculated by multiplying the marginal profit from the sale of the Defendant's Product ([i]) by the ratio of the price of the SD engine ([ii]) to the total price of the SD dicer ([iii]) ([i] × [ii] / [iii]), and construe that the presumption under Article 102, paragraph (2) of the Patent Act should be rebutted for the part beyond that amount. Such interpretation is consistent with approving the application of Article 102, paragraph (2) of the Patent Act by determining that, as far as the market profit for the part corresponding to the component in the finished product market is concerned, the patentee's act of selling the component is indirectly in a competitive relationship with the act of transferring the infringing product (finished product) via the act of producing or the act of transferring the finished product that uses the component.

B. The Appellee makes various arguments, stating that, on the premise that the presumption extends to the overall marginal profit from the sale of the Defendant's Product, the rebuttal rate will be 25%, or the presumption extends to 75% of the marginal profit (in which case there will be no rebuttal), but none of these arguments can be accepted, as described below.

(A) The Appellee argues that an SD dicer, which can cut a wafer that cannot be cut by a blade dicer, has high technical value, and in light of the fact that there is no difference in the basic configuration of the platform between an SD dicer and a blade dicer, the price difference between an SD dicer and a blade dicer (● times in the listed price, and ● times to ● times or more in the selling price) is the value of an SD engine.

However, there is no sufficient evidence to find that the parts of an SD dicer and a blade dicer excluding their engines are interchangeable, and it cannot simply be said that the price difference between an SD dicer and a blade dicer is the value of an SD

engine.
(B) The Appellee alleges that the cost for manufacturing a platform for an SD dicer is about ●●●●● yen at the most, whereas the Appellee's selling price of the SD engine for the Appellant is, with regard to 700SPH, ●●●●● yen, and therefore, the value of the SD engine is high. However, this argument is inappropriate in that it compares between the "manufacturing cost" of the platform for an SD dicer and the "selling price" of the SD engine.
(C) The Appellee argues that Corrected Invention 1 embodies the core technical idea of the stealth dicing technology, and that its importance is extremely high, with no alternative technology.

However, even if that is so, what the Appellee manufactures is the SD engine, which is a component of the SD dicer, and in this respect, it is unreasonable to presume the total amount of the infringer's profit (the profit from the sale of the SD dicer) to be the damage incurred by the Appellee, and rebuttal of the presumption cannot be avoided, as mentioned in A. above. The Appellee's abovementioned argument does not serve as a reason to prevent the rebuttal of presumption made from such viewpoint.
C. The Appellant argues that the presumption rebuttal rate will not be any lower than 89%, considering the existence of competitors, the Appellant's sales efforts, other technical features of the Defendant's Product, and the fact that the Appellee is claiming compensation for damage against the Appellant based on other patent rights in other litigation.

However, the sales figures of the competitors are unclear as mentioned above, and there are no sufficient allegation and proof of specific circumstances for rebutting the presumption with regard to the Appellant's sales efforts and other technical features of the Defendant's Product.

Next, in regard to the fact that the Appellee is claiming compensation for damage against the Appellant based on other patent rights in other litigation, even if such claim is made, as long as it is based on another patent right, it naturally does not affect the amount awarded in this case even if it is based on a related patent right. In addition, the judgments on such claims, including a claim based on a patent right relating to another patent (Intellectual Property High Court 2023 (Ne) 10037), have yet to become final and binding, and their ultimate outcomes are unclear.

Thus, the Appellant's abovementioned argument also cannot be accepted.
D. As a next step, according to the idea indicated in A. above, the Appellee's amount of damage after the rebuttal will specifically be calculated by a method of multiplying the marginal profit from the Defendant's Product by the ratio of the price of the SD engine

to the total price of the SD dicer.

(A) There is no dispute over the fact that the price of the SD dicer is 100 million yen.

(B) According to the written basic contract for sales and purchase (Exhibit Otsu 14) concluded between the Appellee and the Appellant on June 8, 2006, the Appellee's selling price of the SD engine for the Appellant is basically [redacted] yen per unit, and from October 2009 to September 2010, the selling price was set at [redacted] yen to [redacted] yen per unit according to the cumulative number of units sold.

In a report dated September 8, 2015 (Exhibit Otsu 339), the Appellee proposed [redacted] to the Appellant as the price of the SD engine.

On the other hand, in around [redacted], the Appellee sold the SD engine (800DS) to Disco for a price of [redacted] yen (including the AF unit and the objective lens), and in around [redacted], the Appellee sold the SD engine (1000DS) to Disco for a price of [redacted] yen (Exhibits Ko 142, 147, and 148).

In addition, the Appellee sold a total of [redacted] units of the Appellee's SD engine unit to the Appellant at [redacted] yen per unit during the period from March 2015 to around September 2016 (Exhibits Ko 205, 222, and 223).

As stated above, the price of the Appellee's SD engine unit was not constant. In particular, the prices for Disco are disclosed only for two cases in year [redacted] and year [redacted], although more than [redacted] units of Disco's SD dicer equipped with the Appellee's SD engine were sold during the five years from 2016 to September 2019 (the entire import of oral arguments; on p. 14 of the petition for the incidental appeal, the Appellee recognizes the number of units sold by Disco as found in No. 4, 31. (1) B. (C) [p. 455] of the judgment in prior instance).

(C) While the Appellant, which is the infringer, should bear the burden of proof with regard to the circumstances relating to rebuttal of presumption, in this case, there is no dispute over the basic circumstances that serve as the basis for rebuttal of presumption (the fact that the infringer's profit is the profit from the sale of the SD dicer product, whereas what is sold by the Appellee as a competing product is the SD dicer, which is its component), and the question is merely the finding of the selling price of the Appellee's SD engine for reasonably calculating the rebuttal rate. It is unavoidable for the Appellant, which is not in a position to know this selling price, to be unable to prove this accurately, and reasonable presumption should be made by comprehensively considering the facts that have been clarified based on evidence.

Considering the viewpoint above, it is reasonable to find, under the facts and

evidence referred to in (B) above, that the price of the Appellee's SD engine as a premise for calculating the presumption rebuttal rate is the median value between the amount alleged by the Appellant (●●●●● yen) and the amount disclosed by the Appellee (as it is roughly around ●●●●● yen, it will be deemed to be ●●●●● yen), which amounts to ●●●●● yen. Then, its percentage in the price of the SD dicer sold by the Appellant, which is 100 million yen, will be ●●●●%, so the presumption will be rebutted for the part of the marginal profit beyond this percentage.

Based on the above premise, if the sales amount in each term is multiplied by the abovementioned marginal profit ratio, and this is further multiplied by ●●●%, the result will be 756,287,981 yen, which is as indicated in the "Total" of the "After rebuttal (A)" column in Attachment 6 "Statement of Accepted Amounts." This will be the amount of damage calculated pursuant to Article 102, paragraph (2) of the Patent Act.

3. Regarding Issue 6-2-1 (Whether Article 102, paragraph (1) of the Patent Act is applicable)

(1) Article 102, paragraph (1) of the Patent Act provides for the method for calculating the amount of damage when seeking compensation for damage relating to lost profit due to a decrease in sales quantity under Article 709 of the Civil Code. Article 102, paragraph (1), item (i) of the Patent Act provides that the amount arrived at when the amount of profit per unit for the articles that the patentee or exclusive licensee (the "patentee, etc.") would have been able to sell if the infringement had not taken place is multiplied by the quantity of articles that the infringer has transferred is to be the amount of damage to the extent of the ability of the patentee, etc. to work the invention. It further provides that if the infringer proves that there are circumstances that render the patentee, etc. unable to sell a quantity of products equivalent to all or part of the transferred quantity, the amount according to the quantity corresponding to those circumstances is to be deducted. Article 102, paragraph (1) of the Patent Act aims to enable more flexible finding of the decreased quantity of sales by shifting the burden of proof from the patentee, etc. to the infringer regarding the decreased quantity of sales that have a reasonable causal relationship with the act of infringement.

In light of the wording of Article 102, paragraph (1) of the Patent Act and the gist of the statements above, the "articles that the patentee, etc. would have been able to sell if the infringement had not taken place" are products of the patentee, etc. the sales quantity of which would be affected by the infringement, or in other words, they are products of the same kind as the infringing products that are offered to the same consumers, and are products in a competitive relationship with the infringing products in the market in that they could have been sold or exported had there been no act of

infringement by the infringer.
(2) As stated above, in the domestic market, the stealth dicer is sold almost exclusively by the Appellant and Disco that receives a supply of the SD engine from the Appellee. Also, the Appellee's SD engine itself is only a component of stealth dicer products, but it is the core of the technology for stealth dicer products, and it is considered that in the configuration of the Defendant's Product, the part corresponding to the Appellee's SD engine embodies the essential technical feature of stealth dicer products and serves as the source of competitiveness of the products. Therefore, it is found that the sales quantity of the Appellee's SD engine would be affected by the infringement, and thus it should be said that, in this case, the relationship where products "would have been able to be sold if the infringement had not taken place" as stipulated in Article 102, paragraph (1) of the Patent Act can be found.
(3) The Appellant argues as follows: while Article 102, paragraph (1) of the Patent Act is applied only in a case where the patentee was selling "competing products of the same kind as the infringing products that are offered to the same consumers, and are products in a competitive relationship with the infringing products in the market in that they could have been sold or exported had there been no act of infringement by the infringer," consumers of the SD engine sold by the Appellee are manufacturers of semiconductor manufacturing equipment, whereas consumers of the Defendant's Product are manufacturers of semiconductors, and their consumers and markets differ; as the SD engine is not a product in a competitive relationship with laser dicing apparatuses in the market, Article 102, paragraph (1) of the Patent Act is not applicable in this case.

However, as mentioned in (2) above, when examined according to the facts in this case, the patentee is found to be in a relationship where the patentee could have made profit had there been no act of infringement by the infringer, so the Appellant's argument cannot be accepted.
(4) As stated above, it should be said that Article 102, paragraph (1) of the Patent Act is applicable in this case.
4. Regarding Issue 6-2-2 (Amount of damage based on Article 102, paragraph (1) of the Patent Act)
(1) Price per unit of the Appellee's SD engine

As the price of the Appellee's SD engine serves as a premise for calculating "the amount of profit per unit" referred to in Article 102, paragraph (1), item (i) of the Patent Act, the burden of proof should be on the Appellee, which claims the application of that paragraph, and also, it should be possible to clarify this based on objective evidence

from the Appellee's position.

However, no precise evidence to objectively clarify the price of the Appellee's SD engine has been submitted in this case, and under the facts and evidence referred to in 2. (4) D. (B) above, it is not possible to find a price exceeding ●●●●● yen, which is the amount asserted by the Appellant. In this regard, it should be considered unavoidable even if discrepancies occur with the finding of the price of the Appellee's SD engine as a premise for calculating the presumption rebuttal rate.

(2) Regarding the cost

There are no disputes between the parties about the cost of the Appellee's SD engine to the extent of ●●●●● yen.

The Appellee asserts that [i] the cost of 800DS is ●●●●●●●●● yen and [ii] the cost of 1000DS is ●●●●●●●●● yen, based on a screenshot of the cost data recorded in the Appellee's system (Exhibit Ko 142). However, the abovementioned screenshot merely extracts a small portion of a screen, and it cannot be said that the specific contents of the items stated and their accuracy are clear, so it is unreasonable to find the cost based on the abovementioned screenshot.

Further, the Appellee submitted Exhibits Ko 201 and 202 in this instance, but according to the description of evidence, these merely indicate predicted values, and are insufficient as proof for actual values.

Thus, it is reasonable to find that the cost is the abovementioned undisputed ●●●●● yen.

(3) Regarding the lost profit relating to the LD module

The Appellee argues that, if the Appellee's SD engine were sold, the LD module could have been sold ● times in year ●● for 800DS and ● times in year ●● for 1000DS, and claims their marginal profits to be damage that the Appellee incurred.

However, the LD module itself is not an infringing product, and there is no sufficient objective evidence to find that the LD module could have definitely been sold.

Therefore, the lost profit relating to the LD module cannot be found to be damage that the Appellee incurred.

(4) Amount of damage presumed based on Article 102, paragraph (1) of the Patent Act

The amount of profit per unit of the Appellee's SD engine is ●●●● yen, obtained by deducting the cost referred to in (2) from the price per unit of the Appellee's SD engine referred to in (1). The amount of profit for ●● units comes to ●●●●●●● yen, which is lower than the abovementioned amount of damage calculated based on Article 102, paragraph (2) of the Patent Act, that is, 756,287,981 yen. Therefore, in this case, damage based on paragraph (1) of that Article is not accepted.

5. Regarding Issue 6-2-3 (Amount of damage based on Article 102, paragraph (3) of the Patent Act)

(1) Reference for calculating damage based on Article 102, paragraph (3) of the Patent Act

Article 102, paragraph (3) of the Patent Act legally stipulates the minimum amount of damages which the patentee can claim upon patent right infringement. The damage under that paragraph should be calculated in reference to the sales amount of the infringing product, and by multiplying it by the rate of royalty to be received for the working of the patented invention, in principle. In light of the background in which the term "normally" in "the amount of money the patentee ... would have normally been entitled to receive" stipulated in that paragraph was deleted upon amendment by Act No. 51 of 1998, when calculating damage based on that paragraph, the damage does not necessarily have to be based on the royalty rate under a licensing contract for the patent right. Rather, it should be taken into consideration that the rate of royalty to be received for the working of the patented invention, which should be determined ex-post facto for a person that has committed patent right infringement would inevitably be higher than the normal royalty rate.

Therefore, as the rate of royalty to be received for the working of the patented invention, a reasonable rate should be determined while taking into consideration [i] the royalty rate under the licensing contract for the patented invention actually concluded, or if it is not known, the market rate for the royalty in the relevant industry, and also by comprehensively taking into consideration various circumstances involved in the lawsuit, including: [ii] the value of the patented invention itself, that is, the technical content and importance of the patented invention and whether it can be replaced with something else; [iii] the contribution of the patented invention to the sales and profits achieved when it is used for the product in question, and how the infringement was committed; and [iv] the competitive relationship between the patentee and the infringer and the patentee's sales policy.

(2) Application to this case

A. The royalty rate under the licensing contract for the patented invention actually concluded, or if it is not known, the market rate for the royalty in the relevant industry ([i]), and the competitive relationship between the patentee and the infringer and the patentee's sales policy, etc. ([iv])

(A) As mentioned above, regarding the manufacture of the SD engine set, which is a core unit of the stealth dicing technology the Appellee developed, the Appellee has made in-house manufacturing essential, and has not granted any manufacturing license,

and continues the research and development of advanced technologies by using the sales profit from the SD engine. Therefore, when granting a comprehensive license to an alliance partner, the Appellee makes the sale of the Appellee's SD engine a major premise, and positions the sale of the SD engine to the alliance partner and the alliance partner's payment of royalties for the patented inventions relating to SD technology-related patents as conditions inseparable from the licensing. The Appellee grants a comprehensive license to alliance partners for SD technology-related patents including the Patented Invention based on a royalty rate of ●% of the final selling price of the SD dicer, but never grants a comprehensive license for the SD technology-related patents to SD manufacturers that do not purchase the SD engine from the Appellee.

Therefore, between the Appellee and the Appellant, the license fee was initially set at ●% under the Business Alliance Contract, but was subsequently lowered to ●●●% (Exhibit Otsu 15), but it is not reasonable to use this royalty rate as the reference for calculating the reasonable royalty rate.

(B) As stated above, stealth dicers are sold mostly by the Appellant and Disco that receives a supply of the SD engine from the Appellee, and there is clearly a competitive relationship between the two.

(C) According to Teikoku Databank's "Research and Study Report on How Patents, etc. Should Be Utilized Based on the Value Assessment of Intellectual Property: Understanding the Actual Status of the Value of Intellectual Property (Assets) and Royalty Rates" (Exhibit Otsu 482), which is a FY2009 JPO Research and Study Report on Issues of Industrial Property Right Systems, it is found that the average value of the market royalty rate data in the semiconductor field overseas is 5.1% for the United States (p. 94) and 2.0% for Germany (p. 95), and that, in the results of a domestic questionnaire survey in the "precision equipment" field, the average value of the royalty rate was 3.5% (p. 52).

B. The value of the patented invention itself, that is, the technical content and importance of the patented invention and whether it can be replaced with something else ([ii]), and the contribution of the patented invention to the sales and profits achieved when it is used for the product in question ([iii])

Corrected Invention 1 has its technical feature in increasing the parts that serve as the starting point for cutting an object to be processed with stealth dicing technology as a given premise. It can be regarded to have a reasonable value because it facilitates the cutting of a thick object to be processed and it can respond to diverse objects to be processed. However, unlike Description, etc. 2, Description, etc. 1 does not mention the warping or unevenness of the wafer as problems, and illustrates an object to be

processed with no warping or unevenness. Also, it is not a technology that guarantees that a modified region will be securely formed within the wafer even if the wafer is warped or uneven. In addition, Inventions 2-2 and 2-3 can deal with the warping or unevenness of the wafer, but cannot sufficiently deal with fluctuations in the shape of end parts.

Therefore, while Corrected Invention 1 has a reasonable value, and it may also contribute to sales and profit, it has some problems that need to be solved by Inventions 2-2 and 2-3, and the Defendant's Product (moderate tracking type) does not fall within the technical scope of Inventions 2-2 and 2-3 (No. 5, 2. (3) above).

C. How the infringement was committed ([iii])

The Appellant's assertion of the validity of the Licensing Contract on the basis including handwritten statements on a memo sheet with the Appellant's company name on it, in spite of the fact that a "written contract or any other document" is required for changing the contents of the Business Alliance Contract, must objectively be considered as a far-fetched argument.

On the other hand, the Appellant frequently communicated with the Appellee's side, and there is a statement in the Appellee's internal report on the meeting held on March 25, 2015 (Exhibit Ko 60) that the Appellant's side ultimately indicated an intention to purchase the Appellee's SD engine. In addition, the minutes of the negotiations held on October 21, 2016 (Exhibit Ko 151) after it was discovered that the Appellant sold products equipped with the Appellant's SD engine other than the Defendant's Product in No. 1 also indicate the Appellant's recognition that it received a license. Given these circumstances, it cannot go so far as to find that the Appellant's act of infringement was committed by intention, let alone by gross negligence.

D. Discussions

As stated above, the license fee was initially set at ●%, but subsequently lowered to ●●●% between the Appellee and the Appellant. However, as this had been based on the premise that the Appellant would manufacture and sell the SD dicer using only the Appellee's SD engine, it is inappropriate to adopt this license fee alone as the rate of royalty to be received by the Appellee when this premise is not satisfied. On the other hand, it is also inappropriate to adopt the profit from the Appellee's SD engine itself as the standard for the royalty rate under Article 102, paragraph (3) of the Patent Act. In addition, the Appellant and the Appellee are in a competitive relationship. Furthermore, while Corrected Invention 1 has some problems that need to be solved by Inventions 2-2 and 2-3, the Defendant's Product (moderate tracking type) does not fall within the technical scope of Inventions 2-2 and 2-3. By comprehensively taking into

consideration these circumstances, in addition to the general license fee trends, it is reasonable to find that the rate of royalty to be received by the Appellee for the working of the patented inventions is 15%.

(3) Regarding the parties' arguments

A. The Appellant argues that the Defendant's Product was achieved to be sold in many cases as a successful outcome of customers' trust in and high evaluation of the Defendant's technical capabilities, and the Appellant's sales activities to these customers based on its favorable relationships with them, and that the laser engine developed by the Appellant has a large number of technical features. However, no circumstances are found which have sufficient significance on the determination of the rate of royalty in this case, so these arguments cannot be accepted.

In addition, the Appellant argues that the royalty rate for the Patent Rights never exceeds [redacted]%, which is the royalty per patent agreed between the parties (a total of [redacted]% for Patent Rights 1 and 2), but using the royalty rate of [redacted]% agreed between the parties as the basis and dividing it by the number of the relevant patents is not reasonable in terms of the premise based on which the rate of royalty was set and in that it neglects the original values of the Patent Rights, so this argument cannot be accepted either.

B. The Appellee argues that, in light of its wording, the business alliance contract (Exhibit Ko 143) specifying the penalty royalty rate to be 35% provides for a penalty against the sale of an apparatus that infringes the patent rights of the Appellee in violation of the licensing conditions, and that this should be taken into account also in light of the purport of Article 102, paragraph (4) of the Patent Act.

However, Exhibit Otsu 143 provides that [redacted] in Article 12 (Acts of Violation), but not all of Article 8 has been disclosed. Also, there are many other parts of which contents are unclear, and the preconditions are unknown. Therefore, it is not reasonable to set the rate of royalty for the damage equivalent to royalty based on it.

(4) Amount of damage calculated based on Article 102, paragraph (3) of the Patent Act

The total sales amount in No. [redacted] for which patent right infringement is found in this case is [redacted] yen as indicated in Attachment 6 "Statement of Awarded Amounts." When this amount is multiplied by 15%, it becomes [redacted] yen. This amount is lower than the amount of damage

calculated based on Article 102, paragraph (2) of the Patent Act, that is, 756,287,981 yen. Therefore, in this case, damage based on paragraph (3) of that Article is not accepted.

6. Regarding Issue 6-2-4 (Whether compensation for damage can be claimed without relying on the presumptive provisions, and the amount of damage)

(1) The Appellee argues that, during the period from April 2016, when the Appellant newly sold SD dicers for silicon wafers to Samsung, until the present, SD dicers for silicon wafers were only sold by the Appellant and Disco, and because of this and other reasons, a reasonable causal relationship can be found that the Appellee lost profit due to being unable to sell the Appellee's SD engine in the quantity of the Defendant's Product manufactured and sold by the Appellant. However, considering the existence of other SD dicer manufacturers, such as EO, there are no sufficient circumstances to find a reasonable causal relationship without relying on the presumptive provisions.

In addition, the Appellee claims lost profit in the same amount as the amount of damage based on Article 102, paragraph (1) of the Patent Act, and there is no sufficient evidence to award an amount exceeding the amount of damage based on Article 102, paragraph (1) of the Patent Act as found above.

Meanwhile, the Appellee also claims a license fee, but there are no grounds for claiming a license fee based on the Business Alliance Contract in a claim for compensation for damage based on tort.

(2) Thus, a claim for compensation for damage that does not rely on the presumptive provisions lacks evidence to prove the amount of damage and is therefore groundless.

7. Regarding Issue 7 (Whether unjust enrichment exists and amount of unjust enrichment)

The Appellee's claim for return of unjust enrichment is an alternative claim subject to the condition that a claim for compensation for damage based on tort will not be recognized, and the amount claimed is the same as the amount of damage based on Article 102, paragraph (3) of the Patent Act. However, as mentioned above, damage in an amount exceeding the amount of damage based on Article 102, paragraph (3) of the Patent Act is recognized pursuant to Article 102, paragraph (2) of the Patent Act in this case, so it is not necessary to make a determination regarding this alternative claim.

8. Attorneys' fees and delay damages

(1) Regarding attorneys' fees

The appropriate amount of attorneys' fees that have a reasonable causal relationship with the tort of patent right infringement in this case is 10% of the amount of damage found in 2. above.

That amount is as stated for each transaction in the "Attorneys' fees (B)" column in Attachment 6 "Statement of Awarded Amounts" (rounded down to the nearest yen).

(2) Regarding the start date for calculating the delay damages

For Nos. 2 to 33, the starting point for calculating delay damages is November 1, 2018 (a date after the tort), and for Nos. 34 onward, the starting point is the last day of the month in which the relevant products were sold as stated in the "Start Date" column in Attachment 6 "Statement of Awarded Amounts."

9. Summary on the amount of damage

According to the above, the Appellee's claim against the Appellant is well-grounded to the extent of claiming 831,916,753 yen as the principal of the amount of damage, including attorneys' fees, and delay damages accrued thereon from the start dates stated in the table in Attachment 6 "Statement of Awarded Amounts" (for No. ●●●●, at the rate of 5% per annum as provided in the Civil Code before the amendment by Act No. 49 of 2017, and for No. ●●●●●, at the rate of 3% per annum as provided in the Civil Code after the amendment).

While there is no dispute over the fact that the Provisional Payment constitutes "what the defendant delivered based on a declaration of provisional enforceability" referred to in Article 260, paragraph (2) of the Code of Civil Procedure, the abovementioned amount of damage was determined without taking into consideration the facts of the Provisional Payment (the judgment of the First Petty Bench of the Supreme Court of February 9, 1961, Minshu, Vol. 15, No. 2, at 209), and the same applies to the delay damages included therein (the judgment of the Supreme Court of April 21, 1926, Minshu, Vol. 5, at 266; and the judgment of the Second Petty Bench of the Supreme Court of April 6, 2012, Minshu, Vol. 66, No. 6, at 2535). In terms of substantive law, the Provisional Payment has an effect of tender of performance, and its amount, 1,755,224,165 yen, is higher than the amount to be paid by the Appellant to the Appellee at the point of time of the Provisional Payment (a total of 960,953,963 yen including delay damages of 129,037,210 yen). Therefore, it is construed that delay damages do not occur for January 21, 2023 onward (the Appellee also does not dispute this point in particular), but they should be taken into consideration in judicial enforcement proceedings based on a final and binding judgment.

No. 7 Summary of the court decision (regarding the petition under Article 260, paragraph (2) of the Code of Civil Procedure)

1. According to the respective evidence indicated below and the entire import of oral arguments, the following facts are found.

(1) In an e-mail sent on January 16, 2023 (Exhibit Otsu 538) after the judgment in prior

instance was rendered, the Appellant's counsel proposed as follows to the Appellee's counsel: with regard to the compensation for damage ordered in Paragraph 3 of the main text of the judgment in prior instance, the Appellant will make a payment with reservation on a condition that the judgment in prior instance would be revoked or modified, on January 20, 2023; and in making the payment, the parties will conclude a memorandum, and after comparing the amount which the Appellant will be ordered to pay at the time when the judgment becomes final and binding with the abovementioned amount of payment, if the former exceeds the latter, the Appellant will pay the difference to the Appellee, if the former and the latter are the same amount, adjustment of the amount will not be required, and if the latter exceeds the former, the Appellee will pay the difference to the Appellant with an interest accrued thereon at the rate of 3% per annum from January 21, 2023 onward.

(2) In an e-mail sent on January 19, 2023, the Appellee's counsel rejected the conclusion of a memorandum against the Appellant's counsel, and informed the Appellant's counsel of their idea that they cannot consider a payment with reservation to be a lawful offer of payment, but if the Appellant is to make the payment as an intention of ultimate dispute resolution, they can accept a proposal of an ultimate settlement agreement to fully resolve the dispute in this case and a payment as its advance performance.

In response, the Appellant's counsel informed the Appellee in an e-mail sent on January 20, 2023 (Exhibit Ko 225) that they will tell the Appellant the contents of the Appellee's reply, but that the payment itself will be made as planned, and the Provisional Payment was made.

2. Article 260, paragraph (2) of the Code of Civil Procedure particularly provides for the obligation of restoration and obligation of compensation for damage imposed on the plaintiff for whom provisional enforcement was effected. This is found to be due to a consideration that, in response to the fact that the plaintiff is given special interest of effecting provisional enforcement while judgment is still not final and binding, if that judgment is modified, it will be fair to impose on the plaintiff that took advantage of the provisional enforcement an obligation to restore the original state regarding any disadvantages suffered by the defendant due to the provisional enforcement (the judgment of the Third Petty Bench of the Supreme Court of March 15, 1977, Minshu, Vol. 31, No. 2, at 289).

The question in this case is, when the obligation to return under Article 260, paragraph (2) of the Code of Civil Procedure occurs for money that the defendant delivered based on a declaration of provisional enforceability, whether or not interest or delay damages arise after the delivery of that money as the principal. However, it is

clear from the wording that such interest or delay damages are not subject to "return what the defendant delivered based on a declaration of provisional enforceability" (restoration of the original state), and the primary question will be whether or not they are subject to the compensation for damage stipulated in that paragraph.

Given that Article 260, paragraph (2) of the Code of Civil Procedure distinguishes between return of what the defendant delivered "based on a declaration of provisional enforceability" (restoration of the original state) and compensation for damage the defendant suffered "due to provisional enforcement or in order to avoid it," in order to say that something is damage the defendant suffered "due to provisional enforcement or in order to avoid it," mere declaration of provisional enforceability is considered to be insufficient, and the start of enforcement by the plaintiff or equivalent facts are construed to be required. This interpretation is consistent with the fact that provisional enforcement may be effected sua sponte (Article 259, paragraph (1) of the Code of Civil Procedure).

The case of the judgment of the Third Petty Bench of the Supreme Court of June 1, 2010 cited by the Appellant is a case in which there is no dispute over the fact that the "appellee" stated in the appellant's "written petition for a judicial decision ordering restoration of the original state and compensation for damage associated with provisional enforcement" "notified the appellant that it plans to effect provisional enforcement based on the judgment in prior instance of this case," so it is not inconsistent with the abovementioned determination.

3. While the judgment in prior instance found it a condition for provisional enforcement that the Appellant provides security in the amount of 1 billion yen in this case, the Appellee neither commenced the enforcement which required provision of security nor had circumstances equivalent to commencing the enforcement, such as indicating to the Appellant that the Appellee will commence the enforcement.

Therefore, "damage the defendant has suffered due to provisional enforcement or in order to avoid it" is not found to have occurred in this case, and as an issue of a delay in performance of a general obligation without a time limit, it should be construed that the liability for delay occurs from the time of receiving the request for performance (Article 412, paragraph (3) of the Civil Code). It should be construed that the start date for calculating delay damages in this case is the day following the date of service of this judgment.

4. The Appellant also claims the interest after acceptance based on Article 704 of the Civil Code on the premise of applying the provisions on unjust enrichment by analogy, but there is no sufficient evidence to find that the Appellee was a beneficiary in bad

faith at the time of accepting the money relating to the Provisional Payment. It is construed that, in order to say that the Appellee was a beneficiary in bad faith, the Appellee needs to have actually recognized that the order for delivery with a declaration of provisional enforceability in the judgment in prior instance would be rescinded. However, such fact inevitably cannot be found under the facts of this case. In addition, even if the court disclosed its conviction to modify the judgment in prior instance (a reduction of the awarded amount) in the process of the proceedings in this instance, it is not appropriate to find that the Appellee became a beneficiary in bad faith at that point of time.

5. While the amount delivered by the Appellant in relation to the Provisional Payment is 1,755,224,165 yen ([i]), the amount awarded for the claim for compensation for damage in this instance after modification of the judgment in prior instance is 831,916,753 yen ([ii]), and the amount of final and binding delay damages accrued on this principal until the date of the Provisional Payment (January 20, 2023) is the total of 129,037,210 yen ([iii]; rounded down to the nearest yen) as stated in the "Damages" column in Attachment 6 "Statement of Awarded Amounts." Therefore, the amount which the Appellee should be ordered to return based on the petition under Article 260, paragraph (2) of the Code of Civil Procedure comes to 794,270,202 yen (= [i] − [ii] − [iii]).

No. 8 Conclusion

According to the above, the Appellee's claim against the Appellant should be upheld to the extent of seeking payment of 831,916,753 yen and delay damages accrued thereon based on tort, and the rest of the claim is groundless and should be dismissed. The part of the judgment in prior instance which differs from this is to be modified as stated in Paragraph 1 of the main text based on the appeal filed by the Appellant and the incidental appeal filed by the Appellee. The Appellant's petition under Article 260, paragraph (2) of the Code of Civil Procedure is well-grounded and therefore to be upheld to the extent of seeking payment of 794,270,202 yen and delay damages accrued thereon at the rate of 3% per annum for the period from the day following the date of service of this judgment until the completion of the payment, and the rest of the petition is to be dismissed. Meanwhile, the part of the judgment in prior instance upholding the claim for an injunction against manufacture and sale, etc. and disposal of the Defendant's Product has ceased to be valid due to withdrawal of an action therefor by the Appellee, so that fact will be clarified, and the judgment is rendered as indicated in the main text.

Intellectual Property High Court, Fourth Division
Presiding judge: MIYASAKA Masatoshi
Judge: MOTOYOSHI Hiroyuki
Judge: IWAI Naoyuki

Attachment 1
List of Abbreviations

(Abbreviation) (Meaning)
○ Patent 1: the patent of Patent No. 3867108 for which the Appellee is the patentee
・ Invention 1: the invention relating to Claim 1 of the claim of Patent 1
・ Corrected Invention 1: the invention relating to Claim 1 of the claim of Patent 1 after the Correction
・ Description, etc. 1: the description and drawings relating to Patent 1 (Exhibit Ko 1-2)
○ Patent 2: the patent of Patent No. 4601965 for which the Appellee is the patentee
・ Invention 2-1: the invention relating to Claim 13 of the claims of Patent 2
・ Invention 2-2: the invention relating to Claim 15 of the claims of Patent 2
・ Invention 2-3: the invention relating to Claim 16 of the claims of Patent 2
・ Description, etc. 2: the description and drawings relating to Patent 2 (Exhibit Ko 2-2)
○ The Invalidation Trial: the trial for invalidation requested by the Appellant for Patent 1 (Invalidation Trial No. 2019-800082)
○ The Correction: the correction (already final and binding) relating to the request for correction filed by the Appellee on May 28, 2021 in the procedure of the Invalidation Trial
○ The Defendant's Product: the Defendant's product with any of the following product numbers; a stealth dicing apparatus which is an SD dicer manufactured by the Appellant equipped with an SD engine manufactured by the Appellee; however, excluding one that has the plaintiff's SDE mark shown below attached to its housing
1. ML300 series
(Product that includes "ML300" in its model number, such as "ML300," "ML300EX," "ML300EX WH," "ML300PlusWH," or "ML300PlusXWH")
2. ML200 series
(Product that includes "ML200" in its model number, such as "ML200," "ML200EX," "ML200 EX WH," or "ML200PlusXWH")

[Plaintiff's SDE mark]

・ The Defendant's Product (fixed type): the Defendant's Product adopting a method which has the objective lens fixed at a predetermined height in a predetermined region on a wafer (the AF fixed method).

・ The Defendant's Product (moderate tracking type): the Defendant's Product adopting a method which has the objective lens moderately track the fluctuations of the wafer surface before starting the scanning with AF tracking (the moderate tracking AF method).

○ The Provisional Payment: the provisional payment of 1,755,224,165 yen made by the Appellant to the Appellee on January 20, 2023 (a total of the amount awarded in prior instance in relation to the monetary claim and the delay damages accrued thereon until that date) after filing an appeal, in response to the judgment in prior instance upholding a part of the claims with a declaration of provisional execution; it was a payment with reservation made on a condition that the judgment in prior instance would be revoked or modified, while disputing the existence of the obligation which the judgment in prior instance ordered to perform.

End

Attachment 2 "List of Delay Damages"

№	Claimed amount of principal	Accepted amount of principal	Start date	Interest rate
●●	●●●●●●●● yen	●●●●●●● yen	November 1, 2018	5% per annum
●●	●●●●●●●● yen	●●●●●●● yen	March 31, 2019	5% per annum
●●	●●●●●●●● yen	●●●●●●● yen	March 31, 2020	5% per annum
●●	●●●●●●●● yen	●●●●●●● yen	July 31, 2020	3% per annum
●●		●●●●●●● yen		3% per annum
●●	●●●●●●●● yen	●●●●●●● yen	September 30, 2020	3% per annum
●●	●●●●●●●● yen	●●●●●●● yen	November 30, 2020	3% per annum
●●	●●●●●●●● yen	●●●●●●● yen	January 31, 2021	3% per annum
●●	●●●●●●●● yen	●●●●●●● yen	March 31, 2021	3% per annum
●●		●●●●●●● yen		3% per annum
●●	●●●●●●●● yen	●●●●●●● yen	April 30, 2021	3% per annum
●●	●●●●●●●● yen	●●●●●●● yen	June 30, 2021	3% per annum
●●	●●●●●●●● yen	●●●●●●● yen	July 31, 2021	3% per annum
●●	●●●●●●●● yen	●●●●●●● yen	August 31, 2021	3% per annum
●●	●●●●●●●● yen	●●●●●●● yen	February 28, 2022	3% per annum
●●	●●●●●●●● yen	●●●●●●● yen	June 30, 2022	3% per annum

Attachment 3 Claim of Patent 1 (Claim 1)

1. (Before the Correction)

A laser processing apparatus for forming a modified region as the starting point for cutting within a wafer-like object to be processed,

comprising

a mounting table on which the object to be processed is mounted,

a laser light source for emitting laser light,

a light-converging lens for converging the laser light emitted from the laser light source within the object to be processed mounted on the mounting table, and forming the modified region at the position of the light-converging point of the laser light, and

a control part having a function to locate the light-converging point of the laser light at a first position that is a first distance away from the laser light incident surface of the object to be processed in the thickness direction of the object to be processed and move the light-converging point of the laser light along a line along which the object to be processed is to be cut, and then to locate the light-converging point of the laser light at a second position that is a second distance away from the laser light incident surface in the thickness direction of the object to be processed and move the light-converging point of the laser light along the line along which the object is to be cut,

which is a laser processing apparatus characterized in that the object to be processed is a silicon wafer.

2. (After the Correction)

A laser processing apparatus for forming a modified region as the starting point for cutting within a wafer-like object to be processed,

comprising

a mounting table on which the object to be processed is mounted,

a laser light source for emitting laser light,

a light-converging lens for converging the laser light emitted from the laser light source within the object to be processed mounted on the mounting table, and forming the modified region at the position of the light-converging point of the laser light, and

a control part having a function to locate the light-converging point of the laser light at a first position that is a first distance away from the laser light incident surface of the object to be processed in the thickness direction of the object to be processed and move the light-converging point of the laser light along a line along which the object to be processed is to be cut, and then to locate the light-converging point of the laser light at a second position that is a second distance away from the laser light incident surface in

the thickness direction of the object to be processed and move the light-converging point of the laser light along the line along which the object is to be cut,

which is a laser processing apparatus characterized in that the object to be processed is a silicon wafer with no groove formed along the line along which the object is to be cut in a silicon monocrystal structure part.

Attachment 4

(omitted)

Attachment 5 Marginal Profit Statement

Term	93B	94A	94B	95A	95B	96A	96B	97A	97B	98A	98B	99A	99B	100A
Sales period	Oct. 2015–Mar. 2016	Apr. 2016–Sep. 2016	Oct. 2016–Mar. 2017	Apr. 2017–Sep. 2017	Oct. 2017–Mar. 2018	Apr. 2018–Sep. 2018	Oct. 2018–Mar. 2019	Apr. 2019–Sep. 2019	Oct. 2019–Mar. 2020	Apr. 2020–Sep. 2020	Oct. 2020–Mar. 2021	Apr. 2021–Sep. 2021	Oct. 2021–Mar. 2022	Apr. 2022–Sep. 2022
Sales amount	(omitted)													
Direct costs														
Sales commissions														
Variable sales costs-1														
Marginal profit														
Marginal profit ratio														

Attachment 6 Statement of Awarded Amounts

NO.	Term	Sales amount	Marginal profit ratio	Marginal profit	After rebuttal (A)	Attorneys' fees (B)	A + B	Start date	Date of provisional payment	Number of days	Interest rate	Damages
(omitted)												

(omitted)

Total