2005 (Ne) 10021 Appeal Case of Seeking Injunction Against Patent Infringement (Court of prior instance: Tokyo District Court; 2004 (Wa) 8557) (Date of conclusion of oral argument: November 4, 2005)

Judgment

Appellant: Canon Inc.

Counsel attorney: MASUI Kazuo

Same as above: HASHIGUCHI Naoyuki

Same as above: IWAKURA Masakazu

Same as above: SAKURABA Nobuyuki

Same as above: SUMOMO Mayuko

Same as above: MATSUDAIRA Sadayuki

Same as above: KISHIDA Naoko

Same as above: UNO Shintaro

Same as above: SHIBATA Naofumi

Sub-agent of a counsel attorney: MORI Michihiro

Appellee: Recycle Assist Co., Ltd.

Counsel attorney: KAMIYAMA Hiroshi

Same as above: NISHIMOTO Tsuyoshi

Same as above: KAWAI Nobuyuki

Main text

1. The judgment in prior instance shall be revoked.
2. The appellee shall not import, sell or display for sale the ink tanks specified in attachments (1) and (2).
3. The appellee must dispose of the ink tanks specified in the preceding paragraph.
4. The appellee shall bear the court costs for both the first and second instances.

Facts and reasons

No. 1 Judicial decision sought by the parties

1. Appellant

(1) The same gist as the main text.

(2) Declaration of provisional execution.

2. Appellee

(1) The appeal in question shall be dismissed.

(2) The appellant shall bear the cost of the appeal.

No. 2 Outline of the case

1. Summary of the case

(1) The appellant is the holder of the patent prescribed in 2.(1) below (hereinafter referred to as the "Patent"). The appellant manufactures and sells the ink tanks prescribed in 2.(4) below that fall within the technical scope of the invention described in Claim 1 of the Patent (invention of a liquid container; hereinafter referred to as "Invention 1") (the ink tanks shall hereinafter be referred to as the "appellant's products") using the process belonging to the technical field of the invention described in Claim 10 of the Patent (invention of a process to manufacture the liquid container; hereinafter referred to as "Invention 10," which may be collectively referred to as the "Inventions" together with Invention 1).

The appellee is engaged in the import and sale of the ink tanks specified in attachments (1) and (2) of the judgment (the same attachments (1) and (2) as used in the judgment in prior instance; hereinafter such ink tanks shall collectively be referred to as the "appellee's products"). The appellee's products were manufactured by refilling the appellant's products whose ink has been used up with ink.

The appellant brought this action based on the Patent to seek injunctive relief in order to prevent the appellee from importing and selling the appellee's products and force it to dispose of such products.

(2) Both parties admit that the appellee's products meet every constituent feature of Invention 1 and fall within the technical scope thereof. Moreover, the parties admit that the appellee's products were manufactured by refilling with ink the used appellant's products which have been sold in or outside Japan by the appellant or a person licensed by the appellant, and that the manufacturing process therefor meets every constituent feature of Invention 10 and falls within the technical scope thereof.

In this litigation, the appellee alleges that the appellant should not be allowed to exercise the Patent to claim injunctive relief and disposal, claiming exhaustion of the Patent in respect of the appellee's products made by refilling with ink the appellant's products sold in Japan, and citing the reasons for the judgments of the Supreme Court (judgment of the Third Petty Bench of the Supreme Court of July 1, 1997, Minshu Vol. 51, No. 6, at 2299; hereinafter referred to as the "Supreme Court Judgment on the BBS Case") in respect of the appellee's products made by refilling with ink the appellant's products sold overseas.

In response to this, the appellant argues that the appellant should not be prevented from exercising the Patent against the appellee's products since the act of

manufacturing the appellee's products should be regarded, in light of the process of refilling with ink the used appellant's products, as "production" of products that fall within the technical scope of Invention 1 and "use" of production process covered by Invention 10.

(3) Then, it would be questioned in this litigation whether or not the abovementioned allegations made by the appellee are well-grounded. The appropriate way of examining this point would be to make such examination separately for Invention 1 (product invention) and Invention 10 (process invention for producing a product), and for appellant's products sold in Japan (hereinafter such products shall be referred to as "the appellant's products for domestic sale") and those sold overseas (hereinafter referred to as the "appellant's products for overseas sale"). Accordingly the issues shall be as follows.

a. Whether or not the appellant should be allowed to exercise the Patent for Invention 1 (product invention) against the appellee's products that are manufactured by refilling with ink the appellant's products for domestic sale.

b. Whether or not the appellant should be allowed to exercise the Patent for Invention 10 (process invention for producing a product) against the appellee's products that are manufactured by refilling the appellant's products for domestic sale with ink.

c. Whether or not the appellant should be allowed to exercise the Patent against the appellee's products that are manufactured by refilling the appellant's products for overseas sale with ink.

As this case involves international matters such as the places where some of the appellant's products were sold or where the appellee's products were manufactured are outside Japan, the governing law may be put in question. Yet, what is claimed in this action by the appellant is the exercise of the Patent to claim injunctive relief and disposal of the relevant products, and thus the laws of Japan where the Patent was registered should be the governing law (judgment of the First Petty Bench of the Supreme Court of September 26, 2002, Minshu Vol. 56, No. 7, at 1551).

(4) The court of prior instance dismissed all of the claims made by the appellant by holding that the allegations made by the appellee were well-grounded. The appellant, who was dissatisfied with this judgment in prior instance, filed this appeal.

2. Basic facts (there is no dispute between the parties over the facts for which no evidence has been listed)

(1) The appellant's Patent

The appellant is a holder of Patent No. 3278410 titled "liquid container, a method of manufacturing the container, the package of the container, an ink jet cartridge in

which the container and a recording head are made integral with each other, and a liquid discharge recording apparatus" (the Patent; filed on April 27, 1999 [Priority claimed in Japan on May 11, 1998]; Registration of establishment of the Patent: February 15, 2002).

(2) Invention 1

a. Claim 1 stated in the section "Scope of claims" included in the description attached to the application for the Patent (hereinafter referred to as the "Description") is as follows (see Japanese Patent Publication in the attachments of this judgment).

"[Claim 1] A liquid container having a negative pressure generating member containing chamber containing therein first and second negative pressure generating members urged against each other and provided with a liquid supplying portion and an atmosphere communicating portion; a liquid containing chamber provided with a communicating portion communicating with said negative pressure generating member containing chamber and forming a substantively hermetically sealed space and storing therein liquid to be supplied to said negative pressure generating members; and a partition wall for partitioning said negative pressure generating member containing chamber and said liquid containing chamber and forming said communicating portion, characterized in that the interface of the urged portions of said first and second negative pressure generating members intersects with said partition wall, said first negative pressure generating member communicates with said communicating portion and can communicate with said atmosphere communicating portion only through the interface of said urged portions, said second negative pressure generating member can communicate with said communicating portion only through the interface of said urged portions, the capillary force of the interface of said urged portions is higher than the capillary forces of said first and second negative pressure generating members, and the negative pressure generating member containing chamber is filled with an amount of liquid which can be held by the entire interface of said urged portions irrespective of the posture of the liquid container"

b. The abovementioned statements of the scope of claims may be divided into the following constituent features A through L (provided, however, that letters I and J are not used).

A. a negative pressure generating member containing chamber containing therein first and second negative pressure generating members urged against each other and provided with a liquid supplying portion and an atmosphere communicating portion;

B. a liquid containing chamber provided with a communicating portion communicating with said negative pressure generating member containing chamber

and forming a substantively hermetically sealed space and storing therein liquid to be supplied to said negative pressure generating members; and

C. a partition wall for partitioning said negative pressure generating member containing chamber and said liquid containing chamber and forming said communicating portion;

D. in a liquid container having A to C above;

E. the interface of the urged portions of said first and second negative pressure generating members intersects with said partition wall;

F. said first negative pressure generating member communicates with said communicating portion and can communicate with said atmosphere communicating portion only through the interface of said urged portions;

G. said second negative pressure generating member can communicate with said communicating portion only through the interface of said urged portions;

H. the capillary force of the interface of said urged portions is higher than the capillary forces of said first and second negative pressure generating members; and

K. the negative pressure generating member containing chamber is filled with an amount of liquid which can be held by the entire interface of said urged portions irrespective of the posture of the liquid container;

L. a liquid container characterized by E to K above.

(3) Invention 10

a. Claim 10 stated in the part "Scope of claims" included in the Description is as follows (see Japanese Patent Publication in the attachments of this judgment).

"[Claim 10] A method of manufacturing a liquid container characterized by:

a step of preparing a liquid container having a negative pressure generating member containing chamber containing therein first and second negative pressure generating members urged against each other and provided with a liquid supplying portion and an atmosphere communicating portion, a liquid containing chamber provided with a communicating portion communicating with said negative pressure generating member containing chamber and forming a substantively hermetically sealed space and storing therein liquid to be supplied to said negative pressure generating members, and a partition wall for partitioning said negative pressure generating member containing chamber and said liquid containing chamber and forming said communicating portion, wherein the interface of the urged portions of said first and second negative pressure generating members intersects with said partition wall, said first negative pressure generating member communicates with said communicating portion and can communicate with said atmosphere communicating portion only through the interface

of said urged portions, said second negative pressure generating member can communicate with said communicating portion only through the interface of said urged portions, and the capillary force of the interface of said urged portions is higher than the capillary forces of said first and second negative pressure generating members;

a first liquid injection step of filling said liquid containing chamber with liquid; and

a second liquid injection step of filling said negative pressure generating member containing chamber with an amount of liquid which can be held by the entire interface of said urged portions irrespective of the posture of said liquid container."

b. The abovementioned statements of the scope of claims may be divided into the following constituent features A' through L' (provided, however, that letter D' is not used).

A'. a negative pressure generating member containing chamber containing therein first and second negative pressure generating members urged against each other and provided with a liquid supplying portion and an atmosphere communicating portion;

B'. a liquid containing chamber provided with a communicating portion communicating with said negative pressure generating member containing chamber and forming a substantively hermetically sealed space and storing therein liquid to be supplied to said negative pressure generating members; and

C'. a partition wall for partitioning said negative pressure generating member containing chamber and said liquid containing chamber and forming said communicating portion;

E'. the interface of the urged portions of said first and second negative pressure generating members intersects with said partition wall;

F'. said first negative pressure generating member communicates with said communicating portion and can communicate with said atmosphere communicating portion only through the interface of said urged portions;

G'. said second negative pressure generating member can communicate with said communicating portion only through the interface of said urged portions;

H'. the capillary force of the interface of said urged portions is higher than the capillary forces of said first and second negative pressure generating members;

I'. a step of preparing a liquid container having the abovementioned constitutions A' to H'; and

J'. a first liquid injection step of filling said liquid containing chamber with liquid; and

K'. a second liquid injection step of filling said negative pressure generating member containing chamber with an amount of liquid which can be held by the entire

interface of said urged portions irrespective of the posture of said liquid container;

L'. a method of manufacturing a liquid container characterized by the abovementioned steps I' to K'.

(4) The appellant's products

a. The appellant is engaged in the manufacture of the appellant's products that fall within the technical scope of Invention 1 (which are ink tanks for ink jet printers, product numbers BCI-3eBK, BCI-3eY, BCI-3eM and BCI-3eC) by a process that falls within the technical scope of Invention 10, in Japan.

b. The appellant's products are not only sold in Japan by the appellant, but also overseas by the appellant as well as the appellant's associate company or trading companies licensed by the appellant. With regard to the appellant's products sold overseas, the appellant had no agreements reached with the assignees to exclude Japan from the areas where the products could be sold or used, and no such exclusion was clearly indicated on the appellant's products, either.

(5) The appellee's products

a. The appellee imports the appellee's products from a company located in Macao of the People's Republic of China (whose company name is unknown; hereinafter referred to as "Company A") (Exhibit Otsu No. 30).

b. The appellee's products are manufactured as follows: An associate company of Company A (whose company name is unknown: hereinafter referred to as "Company B") collects in North America, Europe and Asia including Japan the used appellant's products, which are ink tank cartridges remaining after the ink being used up in ink jet printers (hereinafter referred to as the "Ink Tank Cartridges") and sells them to a subsidiary of Company B (whose company name is unknown; hereinafter referred to as "Company C") that carries out the entire process of manufacturing the appellee's products. (Exhibit Ko No. 8 and Exhibit Otsu No. 30).

c. Company A purchases the appellee's products from Company C and exports them to the appellee. The appellee had been importing and selling the appellee's products until June 2004, at which time the action in question had already been filed, but suspended such import with the identification procedures for prohibited or restricted goods under the Customs Tariff Act being commenced by the Customs. (Exhibit Ko No. 4, Exhibit Otsu No. 30, and the entire import of the oral argument).

(6) The appellee's products' fulfillment of the constituent features

The process employed by Company C to manufacture the appellant's products by using the Ink Tank Cartridges falls within the technical scope of Invention 10 and the appellee's products fall within the technical scope of Invention 1.

3. Allegations made by the parties in regard to the issues

Adding the allegations made by the appellant as mentioned in 4. below and the allegations made by the appellee as mentioned in 5. below, other allegations made by the parties in this court are as stated in sections 3. and 4. in part "No. 2 Outline of the case" included in the "Facts and reasons" in the judgment in prior instance (line 25 on page 8 to the last line on page 17 of the judgment in prior instance), and thus such statement shall be quoted.

4. Allegations made by the appellant in this court

(1) Technical significance of the Inventions

The major technical significance of the Inventions is: (i) to urge against each other two negative pressure generating members with different capillary forces and maximize the capillary force of the interface of the urged portions; and (ii) to fill the product with ink at an amount which the entire interface can hold irrespective of the posture of the ink tank.

In conventional ink tanks, a negative pressure generating member containing chamber contained only one negative pressure generating member. Thus, they were defective in the regard that when the ink tanks were overturned at the time of distribution, the ink in the liquid containing chamber could flow into the negative pressure generating member containing chamber, and therefore, ink would leak out at the time of use. In order to prevent such overflow of ink, the Inventions formed a layer with the highest capillary force in the intermediate portion of the negative pressure generating member containing chamber, enabled such layer to always hold ink no matter what direction the ink tank may be placed, and prevented the flow of air into the liquid containing chamber by using such layer as a barrier to air.

Therefore, the most important constituent feature to achieve the working effect of the Inventions is constituent feature K for Invention 1 (the negative pressure generating member containing chamber is filled with an amount of liquid which can be held by the entire interface of said urged portions irrespective of the posture of the liquid container) and constituent feature K' for Invention 10 (filling said negative pressure generating member containing chamber with an amount of liquid which can be held by the entire interface of said urged portions irrespective of the posture of said liquid container), and ink must be injected to a point slightly above the urged portions to have the entire interface of the urged portions kept wet with ink.

(2) The recycling process used for the appellee's products

a. The recycling process used for manufacturing the appellee's products involves: (i) a step of opening a new hole on the upper surface of the liquid containing chamber of the

used appellant's products or a hole on the portion into which the appellant had pressed a plastic plug, so as to break the hermetically sealed state of the liquid containing chamber; (ii) a step of cleaning and removing the remaining ink by pouring in water with a pump; (iii) a step of drying by a drying machine; (iv) a step of reducing the internal pressure using a decompression device; (v) a step of injecting ink by an ink supply device; and (vi) a step of completely sealing the hole on the upper surface of the liquid containing chamber by the method of heat sealing, etc. The abovementioned process satisfies all of the constituent features specified in the scope of the claims for Invention 10.

b. To recycle used ink tanks, cleaning and drying the inside of the tanks are indispensable. This is readily apparent from objective facts, such as the relationship between the time required for the ink to evaporate and the elapsed time until the used ink tanks enter the recycling process (while it takes 10 days to collect used ink tanks at the earliest, drying and hardening of ink starts in a week to 10 days), analysis by a third party institution (which stated the fact that the component(s) of the ink used in the appellant's products was not detected from the ink used in the appellee's products), and a magazine article for general users (which includes a statement of collecting and cleaning genuine products and then filling them with ink).

Nevertheless, the appellee, who initially alleged that cleaning was unnecessary, later changed his/her allegations by arguing that some ink tanks required cleaning while some did not. The allegations made by the appellee, which are inconsistent with objective facts and which have also been changed, are unreliable.

c. To achieve the working effect of the Inventions where overflow of ink is prevented by forming a barrier to the movement of air on the interface of the urged portions of the negative pressure generating members, the liquid containing chamber must have a substantially hermetically sealed structure. To recycle used ink tanks, the act of only refilling such ink tanks with ink is insufficient and additional recycling actions, such as breaking the hermetically sealed state of the liquid containing chamber by opening a hole on the upper surface thereof and recovering the hermetically sealed state by covering the hole after refilling the tanks with ink, must be made. Thus, manufacture of recycled products is accompanied by physical damage to the appellant's products.

(3) Loss of working effect, etc.

Even where the exhaustion of a patent is alleged, the patentee may deny such exhaustion by alleging and proving that the relevant product has finished its service as a patented product or the relevant product is one where components that constitute an essential portion of the patented invention have been replaced. In this case, the process

of filling the products with ink in a specific manner (constituent feature K of Invention 1 and constituent feature K' of Invention 10) is an essential element of the patented invention, as mentioned in (1) above and (4)b. below, and thus, the act of refilling the Ink Tank Cartridges whose ink has been used up with ink constitutes the act of replacing components that constitute an essential portion of the patented invention. Moreover, it is obvious from the following circumstances mentioned in a. through f. below that the appellant's products have finished their service as a patented product at the time when they have been disposed of for collection as used products with the ink in the ink tanks being used up.

The court precedent where exhaustion of a patent was admitted (Supreme Court Judgment on the BBS Case) is not related to a case where a used patented product is disposed of, collected and then distributed again as a recycled product as is in this case. Thus, the denial of exhaustion of a patent after the working effect of a patented product has been lost is not contrary to said precedent. Rather, based on the grounds on which the court precedent relied in admitting the exhaustion of a patent (e.g. smooth distribution of patented products, the purpose of the Patent Act such as the encouragement of inventions, and avoidance of double benefits to the patentee), it would agree with the gist of the court precedent to admit the effect of the patent right in this case, for the following reasons found in this case: (i) the transaction of patented products has been terminated at the time when the users have disposed of the used products for collection, and secure transactions are not required; and (ii) if free distribution of recycled products competitive with genuine products is allowed, the source of exclusive benefit allowed to the patentee would be lost and the incentives for inventions would be impaired.

a. As the appellant's products are designed for single use because the function drops when the inside of the ink tank gets dry and dust flows into used ink tanks, they have lost their effect as a patented product once the ink tank has been removed from the printer with the ink therein being used up.
b. It is stated in the evidence produced by the appellee in this litigation that used ink tanks cannot be reused by simply refilling them with ink (Exhibit Otsu No. 49 [Japanese Patent Publication No. 3594087]; Japanese patent publication for an invention applied for by a third party and titled "Process for recycling ink cartridges and the recycled products thereof").
c. As ink refills shall be used by the users for ink tanks they are currently using or have just stopped using (wherein the fibers inside are sufficiently wet with ink), the act of recycling ink tanks whose ink has been used up and which have

become increasingly dry and the act of using ink refills cannot be deemed to be the same act.

d. As there is an statement on the package of the appellant's products calling on the consumers for cooperation in bringing the used products to the sales outlet to be recycled as resources, it is obvious that the users of the appellant's products purchase them based on the understanding that the appellant's products are for single use and would lose the effect as a product after the ink has been used up.

e. The fact that the users of the appellant's products dispose of the used ink tanks as waste for collection suggests that such ink tanks have lost their effect as a product.

f. The recycled ink tanks are inferior to the appellant's genuine products in quality and performance, as clarified by the magazine articles for general users and performance testing conducted by the appellant.

(4) Whether the act of "production" has been made

The act of manufacturing the appellee's products by recycling the used appellant's products falls under an act of "production" as mentioned below, and thus the appellee's act of importing and selling the appellee's products constitutes infringement of the Patent.

a. An act of production, which is an act of working a patented invention, can be found for both products whose patent has been exhausted and those for which the patent is not exhausted. Moreover, even if any product is used as a material, if the relevant act is legally found to be an act of "production," such act shall be deemed to be an act of working a patented invention. Accordingly, regardless of whether or not the patent right of the appellant's products has been exhausted, and whether or not the effect of the appellant's products has been lost, if the act of Company C is found to be an act of "production," the appellee's acts of importing and selling the appellee's products manufactured by Company C would constitute infringement of the Patent.

b. As long as the decision on whether or not the relevant act falls under the act of "production" is a determination on whether a patent infringement took place, such decision would be made based on the statements in the scope of claims and thus, the act of adding any repair or modification to an important element stated in the scope of claims constitutes an act of production. Further, where the important portion becomes unavailable or is broken and thereby the significance as a patented product has been lost, the act of recovering the relevant product to its original condition by any repair or modification constitutes an act of

production using such important portion as a component.

In respect of Invention 1, the element where "the negative pressure generating member containing chamber is filled with an amount of liquid which can be held by the entire interface of said urged portions irrespective of the posture of the liquid container" (constituent feature K) is an important portion, and the act of filling the product with ink in such specific manner is an essential means to securely prevent ink leakage during transportation, in relation to the structure of the negative pressure generating member containing chamber of Invention 1. When the appellant's products are to be disposed of after the ink being used up, the products would not be filled with such amount of ink, and thus Company C's act is made to fulfill again the essential elements of Invention 1 and thus constitutes an act of production.

c. To have the interface of the urged portions function as a barrier to the movement of air, the product must be filled with ink at an amount that the entire interface can hold irrespective of the posture of the ink tank. However, as ink has been used up in the used appellant's products, the interface of the urged portions would not be able to perform the abovementioned function. Moreover, while the liquid containing chamber must have a hermetically sealed structure to achieve the working effect of the Inventions, i.e. prevention of ink dripping, once the recycling operator breaks the hermetically sealed structure by opening a hole on the upper surface of the liquid containing chamber to inject ink (including the act of removing the plastic ball inserted on the appellant's products), the working effect of the Inventions would be lost. Therefore, the recycling company's act of filling the product with the abovementioned amount of ink and recovering the hermetically sealed structure by covering the hole falls under the act of recovering an important function of the Inventions which was once lost.

d. The important working effect of the Inventions lies in the formation of a barrier to the movement of air by enhancing the capillary force of the interface of the urged portions. Yet, in the case of used ink tanks, the ink remaining inside the tank would dry and harden, leading to the generation of air bubbles and air layers within the fiber component and thereby preventing said interface from functioning as a barrier. In order to recover such function, cleaning and drying inside the ink tank is necessary. The appellee's products have been manufactured as recycled products through a process including the steps of cleaning and drying, which means that an important function of the Inventions has been recovered, and thus the act of manufacturing the appellee's products

falls under the act of production.

The appellee alleges that the ink stuck to the negative pressure member within the ink tank can be easily melted or removed if heated ink was injected, without cleaning. Nevertheless, as there is no evidence that heated ink is actually injected, and moreover, the act of injecting heated ink is a work absolutely impossible and difficult for general users to carry out, such act cannot be deemed to be a minor repair.

e. Based on the approach taken in the judgment in prior instance to determine whether or not the appellee's act falls under the act of production by collectively taking into consideration the objective characteristics of the patented product, such as its function, structure, quality of material, and use, the contents of the patented invention, normal use of the patented product, degree of modification and the actual circumstances of the transactions involving the patented product, the recycling process used for the appellee's products can still be found to fall under the act of production, as described below.

(a) Regarding the objective characteristics of the patented product, the contents of the patented invention, the normal use of the patented product and the degree of modification, in light of the important constituent features of the Inventions, working effect and the recycling process adopted by the recycling operator as mentioned above, the recycling process used for the appellee's products can sufficiently be found to be an act of "production."

(b) Regarding the actual circumstances of transactions involving the patented product, the court of prior instance dealt with the issue of recycling but made a completely erroneous determination. In light of the conservation of the environment and purpose of laws related to recycling, it should be admitted that the Patent was infringed as mentioned in (6) below. Moreover, the decline in the sales volume of recycled products overseas leads to the conclusion that the determinations made by the court of prior instance in this regard clearly contained factual errors.

(5) Infringement of the production process

The act of working a process invention involves the use of process as well as the use or assignment of the products produced by such process. While the latter is subject to the exhaustion of a patent, the exhaustion doctrine is not applicable to the former. Company C's act of recycling the appellant's products to manufacture the appellee's products is an act of working the production process covered by Invention 10 and thus constitutes infringement of the Patent.

Further, as a product invention and a process invention shall be deemed to be different inventions, the fact that the patent for a product invention is not infringed does not immediately lead to the conclusion that the patent for a process invention is not infringed as well. Even if the recycling operator's act does not constitute an act of production in relation to the product invention, as long as such operator is using the process invention, such operator's act constitutes infringement of a patent.

(6) Perspective of laws related to recycling

Demands for conservation of the environment and laws related to recycling (i.e. the Basic Act on Establishing a Sound Material-Cycle Society, and Act on the Promotion of Effective Utilization of Resources) would only be taken into consideration to the extent where a patent would not be infringed, and do not justify the infringement of a patent. Even if this point was left aside, in light of the following points a. through c. in relation to the activities for conservation of the environment and treatments actually made by the appellant and appellee, finding the appellee's act to be lawful would not contribute to the reuse of resources and conservation of the environment but rather would be contrary to the formation of the material-cycle society aimed for in the laws related to recycling.

a. The appellant analyzes the environmental impacts of its business activities at every stage and seeks minimization of environmental burdens at a huge expense. The appellant is widely recognized, not only by the Japanese industry but throughout the world, as a company making great contribution to the establishment of a sustainable and material-cycle society by its technology for realizing a healthy global environment and performing the social responsibilities required of companies.

b. The appellant has established a technology and system for 100 % recycling of the used ink tanks after collecting them at the collection boxes installed at sales outlets and other relevant facilities and thereby promotes resource saving and elimination of harmful substances. Specifically, the collected used ink tanks are recycled as an energy source after being sorted out and disassembled and then put into a furnace as a firework fuel in the process of manufacturing cement (the gas generated by combustion is cleaned by an anti-pollution device), and the cinders are mixed with clay and used as materials for cements. Through such recycling process, a recycling system is achieved where the used ink tanks are recycled 100 %, the area of landfill for waste is reduced, and the consumption of coal and other valuable resources is reduced.

c. In contrast to this, the appellee has not promoted conservation of the

environment, which is the purpose of laws related to recycling, i.e. to reduce environmental burden at every stage of socioeconomic activities such as production, distribution and disposal. The appellee is only taking a free ride on the ink tanks manufactured by the appellant at a huge expense and the Patent of the appellant, and imports and sells the appellee's products, which are recycled ink tanks manufactured by utilizing the used appellant's products, without making any efforts for conservation of the environment. The appellee is instead causing pollution to the soil and water environment by the waste fluid generated in the process of recycling the used ink tanks. If environmental issues are to be taken into consideration in deciding the existence or absence of patent infringement, the sales, etc. of the appellee's products should be deemed to be unlawful.

(7) Other associated issues

a. The appellee alleges that the appellant is enjoying unreasonable profits as the appellant's products are sold at around 1,000 yen while their manufacturing costs are around 50 yen. However, the price of the appellant's products has been set by paying due consideration to the environment and taking into account the huge investment made in the research and development activities over a number of years. The appellee, on the other hand, has not only neglected to pay attention to the environment but also made no investment in research and development activities, and has further sold recycled products at much the same price as the appellant's products. If acts such as these by appellee were allowed, it would be a disincentive for future research and development activities.

b. The appellee alleges that the appellant sells printers at a low price to spread them among the consumers, thereby creating a situation where the consumers are driven to purchase the appellant's products, and sells consumable components at high prices. However, if the printers were sold at a low price, the consumers should be able to switch to the products of other companies, and thus the allegation made by the appellee is unreasonable. Moreover, patent infringement and the Act on Prohibition of Private Monopolization and Maintenance of Fair Trade (hereinafter referred to as the "Antimonopoly Act") are independent issues in the first place, and thus proper exercise of a patent does not constitute violation of the Antimonopoly Act.

(8) Based on the abovementioned facts, all of the claims made by the appellant should be admitted and the judgment in prior instance which dismissed them should be revoked.

5. Allegations made by the appellee in this court

(1) Criteria for determining exhaustion

The exhaustion doctrine is a theory where the effect of a patent would be indiscriminately exhausted for a patented product which has been lawfully put on the market by the patentee, regardless of the fact whether the patent is granted for a product invention or a process invention, and thus, even if an act which in form falls under the act of working of a patented invention has been conducted in relation to said patented product, the effect of the patent would not extend to such act unless such act is deemed to fall under an act of new production. In this case, as the appellant has assigned the appellant's products which are subject to the Inventions, the question will be whether the appellee's act falls under the act of new production of a patented product or whether it is an allowable repair.

The holding made by the court of prior instance is extremely appropriate in that it determined that the decision on whether or not the relevant act falls under the act of repair or reproduction should be made by taking into consideration the objective characteristics of the patented product, such as its function, structure, quality of material, and use, as well as the contents of the patented invention, the normal use of the patented product, the degree of modification, and the actual circumstances of the transactions involving the patented product in a comprehensive manner. If the extent to which the patent is effective differed according to the patentee's subjective intention, the consumers would suffer from unexpected damages, resulting in the lack of legal stability. Thus, the patentee's intention, even if clearly indicated on the patented product, should not be used as one of the elements to decide whether or not the relevant act falls under the act of repair or reproduction.

(2) Propriety of the findings and determinations made in the judgment in prior instance

The court of prior instance held that the appellee's products which were manufactured by refilling the used appellant's products with ink cannot be found to be a new patented product which lacks identity with the appellant's products yet to be refilled with ink, and thus the act of refilling the products with ink cannot be found to fall under the act of new production in relation to a product patent as well as a process patent, on the basis of the abovementioned criteria for decision and by comprehensively taking into consideration the followings facts it found: (i) the Ink Tank Cartridge is not damaged even after the ink has been used up and thus is available for reuse as an ink container; (ii) the Ink Tank Cartridge enjoys a longer life (lifespan) than the ink which is a consumable component; (iii) ink can be refilled merely by opening an injection hole

on the upper surface of the liquid containing chamber; (iv) the most important structure of the Patent, i.e. the interface which has a high capillary force, remains even after the ink is used up; (v) the ink itself is not a patented part; (vi) from the perspective of conservation of the environment and cost reduction, cheap recycled ink tanks are increasingly preferred and actually traded actively; and (vii) preference for cheap recycled ink tanks is expected to further increase in the future.

The act of refilling the products with ink carried out in this case is nothing but an act of making replacement to part of a product manufactured by working a patented invention, which constitutes part of the constituent features of said invention, after such part has spent its life, in the case where such part has a life obviously shorter than the product as a whole and is designed for easy replacement (an act necessary to continuously use the product or reassign it as secondhand item, which enables the body of the product to complete its lifespan). Thus such act clearly falls under the act of repair. Accordingly, the abovementioned holdings made in the court of prior instance are extremely reasonable and should be affirmed in this court.

(3) Loss of effect, etc.

The appellant argues that even where the exhaustion of a patent is alleged, a patentee can deny such exhaustion when the relevant product has finished its service as a patented product or when the relevant product is one where components that constitute an essential portion of the patented invention have been replaced. Based on this argument, the appellant further alleges that the process of filling the product with ink in a specific manner (constituent feature K of Invention 1 and constituent feature K' of Invention 10) is the essential element of the patented invention and that, in light of the structure of the patented invention, statements indicated on the package, understanding of the general consumers as well as the working effect of the Inventions, the appellant's products lose their effect as a patented product at the time when they are disposed of for collection as used products with the ink contained in the ink tank being used up or when they are removed from the printer. However, the process of filling the product with ink in a specific manner in Invention 1 is not an essential element of the patented invention, and further, as mentioned below, the used appellant's products cannot be considered to have lost its effect as a patented product from the following viewpoints.

a. In light of the points mentioned in (i) through (iii) of (2) above, the appellant's products have not lost their effect because of the structure of the patented product. The appellant alleges that the appellant's products finish their service as a patented product as of the abovementioned time which is after the ink has

been used up, because of the structure of the products where a hermetically sealed state is created and refilling is not expected. Yet, such allegation in substance is made to include the patentee's intention as one of the elements for determination and thus is unreasonable.

b. The statements indicated on the package of the appellant's products are nothing but a one-sided expectation of the appellant, and thus cannot serve as the grounds for finding that the users are purchasing appellant's products based on the understanding that the appellant's products are for single use and would lose their effect as a product if the ink is used up.

c. It is a public understanding that the consumers put used products in a collection box based on an understanding that they are not disposed of as wastes but are provided for recycling. Further, it is found from the results of a survey that recycled ink tanks have a strong position in the ink tank market. Accordingly, there is no understanding that once the ink is used up, the appellant's products lose their effect.

d. With regard to the loss of working effect of the Inventions, the appellant alleges that once the ink is used up, the function as well as the working effect of the appellant's products would be lost for the following reasons: (i) once the ink is used up, the constituent feature where the products are filled with ink at an amount that the entire interface can hold would no longer be satisfied; (ii) upon the act of injecting ink again, the substantially hermetically sealed structure of the liquid containing chamber would be broken; and (iii) inside the collected used products, since the dried ink would adhere to the spaces within the negative pressure members, it would become difficult for the interface to form a barrier to the movement of air.

However, the abovementioned allegation made by the appellant is unreasonable for the following reasons: (i) The Patent relates to a liquid container, where the most important constituent feature to achieve the working effect of the Patent, i.e. prevention of outflow of ink, lies in the interface portion where the two negative pressure generating members are urged against each other. The ink contained in the ink tank is a consumable component which is originally expected to be used up, and such interface portion remains in unchanged form even after the ink has been used up. Further, since the abovementioned working effect can be easily recovered by simply refilling injecting ink again, the loss of the abovementioned working effect due to the use of ink in full does not lead to the conclusion that the ink tank has finished its

service as a patented product; (ii) the hermetically sealed structure of the liquid containing chamber is broken for only a short time when ink is injected again, and is immediately recovered, and further such hermetically sealed structure is maintained in the refilled products when they are distributed or used. Therefore, even if the hermetically sealed structure is once broken in the process of refilling, the working effect of the ink tanks would not be lost; and (iii) it is not usual for the ink remaining inside the used ink tanks to dry, and even if such condition arises, the working effect of the Inventions where the interface forms a barrier to the movement of air and prevents ink leakage would only diminish temporarily. Even if the inside of the ink tank is further dried, the structure of the interface where the two negative pressure generating members are urged against each other, which achieves the working effect of the Inventions, remains in no way different from the original state.

(4) Whether or not the act of refilling the products with ink falls under the act of "repair"

The act of refilling the products with ink carried out in this case is an act to refill the products with ink, which is a consumable component with much too short a life in comparison to the Ink Tank Cartridge, so as to enable the ink tank to complete its expected lifespan. Moreover, the process of recycling does not include any step to physically destroy the structural element of the ink tank (as the hole used for initially injecting ink in the appellant's products is hermetically sealed by a plastic ball, ink can be injected again merely by wedging in or removing this plastic ball. However, there are cases where a new hole is opened independently for injecting ink again, and in such cases, the ink tank is physically destroyed). The physical structure of the Ink Tank Cartridge is exactly the same before and after the injection of ink, and except for the ink, no replacement or modification has been made to the parts. The act of refilling the product with ink is nothing but a replacement of a consumable component with a short lifespan, which is made within the scope where the identity of the patented product can be found, and thus such act is indeed an act of "repair" and cannot possibly deemed to be a "new production of a patented product."

Further, the appellant emphasizes the step of cleaning inside the ink tank conducted in the process of recycling as one of the reasons for considering the act of recycling made in this case to fall under an act of production. However, used ink tanks can be used again without any problem by refilling them with ink without the need of cleaning, if the remaining ink has not dried too much, and even if the ink had significantly dried, the hardened ink would be melted with heated ink and thus

cleaning is not required (actually, some operators refill the used ink tanks with ink without cleaning them). While some of the appellee's products are manufactured by cleaning inside the Ink Tank Cartridges in the process of recycling, some are not. Moreover, the step of cleaning does not involve any modification to the used ink tanks or replacement of the constituent portion of the patented invention, and thus the important constituent feature of the Inventions, where the two negative pressure generating members are urged against each other, is maintained as it is. Since the step of cleaning is not included in the constituent feature of the Inventions, the fact of whether or not cleaning has been made cannot possibly affect the conclusion of this case.

At the same time, the recycling operators use facilities to improve work efficiency but not because the act of refilling the products with ink is a difficult work as alleged by the appellant. The act of refilling the products with ink as carried out in this case can be sufficiently carried out by the general consumers.

(5) Perspective of conservation of the environment

a. Quality of recycled products

The appellant has repeatedly alleged that the quality of the recycled products is questionable. However, such quality should be evaluated by the consumers. Moreover, as the increasing market share of recycled products suggests, recycled products have a quality acceptable by the consumers. Even if there were any difference in the quality between genuine products and recycled products, the selection of genuine products or recycled products should be left to the consumers from the viewpoint of quality and cost-effectiveness, but should not be forced by the patentee.

b. Establishment of recycle market in the U.S. and Europe

In the U.S. and Europe, recycled ink tanks for ink jet printers are sold on a larger scale than in Japan, and such sale of recycled products has been established as a business. There is no reason to prohibit only in Japan a business which is widely established in other countries. Accordingly, it should definitely be concluded that the Patent is not effective against the act of importing and selling the appellee's products which are recycled products, in light of the actual circumstances in international business.

c. Purpose of laws related to recycling

Since ink tanks for ink jet printers themselves are reusable even if the ink has been used up, the act of reusing such ink tanks by refilling them with ink agrees with the philosophy adopted in the laws related to recycling and further contributes to the responses to environmental issues and sound development of the national economy. The

appellant's attitude to prohibit recycling by refilling the products with ink and to gain a monopoly on enormous benefits is completely contrary to the purpose of the laws related to recycling. From this standpoint as well, the appellee's act should be deemed to be lawful.

(6) The appellant's business model

In light of present situation where genuine ink tanks are extremely expensive in contrast to the printer itself, if a patent was effective against the act of importing and assigning recycled products, the consumers would be forced to use genuine products, which are comparatively expensive, with their interests considerably harmed. Meanwhile, the appellant has gained huge profits from the sales of consumable components including ink tanks (it is no exaggeration to say that the appellant is enjoying excessive profits as the appellant's products are sold at around 1,000 yen though the manufacturing cost is around 50 yen), and if, by any chance, the recycle market is eradicated by this case, the appellant would gain increasingly huge profits. This situation which provides excessive protection to the patentee and overly harms the consumers' interests cannot possibly admitted. The judgment in the prior instance is extremely appropriate from the standpoint of the protection of the consumers' interests, in that it dismissed all of the appellant's claims based on the grounds including that "the decision to use a genuine product or a recycled product should essentially be made by the owner of the printer by taking into consideration the balance of price between the printer and ink tank."

Further, the appellant alleges that the appellee's act is a free-ride on the container and components manufactured by the appellant as well as the invention itself. However, a patentee is only guaranteed the opportunity under the exhaustion doctrine, to secure compensation for disclosure of the patented invention, and thus a patent right would only be effective until the time when the right holder has made the first assignment. The "free-ride" as alleged by the appellant is related to the stage of distribution of the products, where no control can be exercised based on the Patent, and thus would not affect the determinations on whether or not the Patent is effective against the act of refilling the products with ink carried out in this case.

(7) Based on the abovementioned facts, the holdings made by the court of prior instance which dismissed every claim made by the appellant are clearly reasonable and this appeal should be dismissed.

No. 3 Holdings of this court

1. Whether or not the appellant should be allowed to exercise the Patent for Invention 1 (product invention) against the appellee's products that are manufactured by refilling

with ink the appellant's products for domestic sale

(1) Exhaustion of a patent (product invention)

a. Where a patentee or patent licensee has assigned the product pertaining to the patented invention in question (hereinafter referred to as the "patented product") in Japan, the patent, having fulfilled its purpose, has been exhausted, and the patentee is no longer allowed to exercise the patent to seek injunctive relief against acts such as using, assigning or leasing the patented product (see the Supreme Court Judgment on BBS Case).

b. However, it is appropriate to construe that the patent is not exhausted and the patentee is allowed to exercise the patent where either of the following conditions is met: (i) the patented product is reused or reclaimed after it has finished its service along with the lapse of its ordinary life as a product (hereinafter referred to as "Type 1 Condition"); or (ii) a third party has made modification or replacement to the whole or part of the components that constitute an essential portion of the patented product (hereinafter referred to as "Type 2 Condition").

This construction is based on the following reasons for Type 1: (i) As in the case of ordinary transactions, patented products are traded in the market on the basis that the assignee will acquire the right to use or reassign the patented products at his/her will independently of the patentee's exercise of right in the course of trade. The abovementioned act of use or reassignment is presumed to be made where the patented product retains its working effect but not where the patented product has lost its working effect due to wear of components or deterioration of ingredients with the lapse of time. Accordingly, even if the a patent was considered to be effective against the patented product reused or reclaimed after it had finished its service, the free distribution of goods in the market would not be impaired; and (ii) A patentee receives value as compensation for the disclosure of the patented invention upon assigning the patented product, at an amount corresponding to the use or reassignment of the patented product to be made until it finishes its service. Therefore, a patentee would not be deemed to gain double profits even if a patent is considered to be effective against a patented product reused or reclaimed after it had finished its service. On the other hand, if a patented product which has finished its service is used or reassigned after being modified, the patentee would be deprived of the opportunity to receive new demands for the patented product and would suffer damage. Regarding Type 2, the abovementioned construction should be allowed for the following reason: Where a third party has made modification or replacement to the whole or part of

the components that constitute an essential portion of the patented product, such product, in terms of a patented product, can no longer be deemed to be a product identical to the patented product in relation to which the patentee had received value as compensation for the disclosure of the patented invention in assigning it. Therefore, even if a patent was considered to be effective against such product, the free distribution of products in the market would not be impaired and rather, if considered to the contrary, the patentee would suffer damage by being deprived of the opportunity to receive new demands for the patented product.

Whether Type 1 Condition is met should be determined based on the patented product by examining whether the patented product has finished its service as a product, whereas whether Type 2 Condition is met should be determined based on the patented invention by examining whether any modification or replacement has been made to the whole or part of the components that constitute an essential portion of the patented invention. Accordingly, if a patented product has finished its service as a product due to any damage to or loss of the whole or part of the components that constitute an essential portion of the patented invention, and then the relevant component has been modified or replaced, both Type 1 and Type 2 Conditions are met. When the modified or replaced component does not constitute an essential portion of the patented invention, Type 2 Condition is not met, but if the relevant patented product is found to have finished its service as a product, Type 1 Condition is met.

c. The court of prior instance held that whether or not a patent was infringed should be determined based on a decision on whether the modification or replacement made to the patented product falls under the act of "repair" or "production," by holding as follows: (i) "Among the effect of a patent, the right of production would not intrinsically be exhausted, and thus if a person who has legally purchased a patented product carries out an act considered to be production of a new patented product, such act would constitute infringement of the patent;" and (ii) "The decision on recycled products as in this case concerning whether the relevant act falls under an act of new production or within the scope of repair which does not fall under an act of new production should be made by comprehensively taking into consideration the objective characteristics of the patented product, such as its function, structure, quality of material, and use, as well as the contents of the patented invention, normal use of the patented invention, the degree of modification, and the actual circumstances of the transactions involving the patented product."

Indeed, the approach taken in the judgment in prior instance where determination on whether or not a patent was infringed in this kind of case is based on the decision concerning whether the modification or replacement falls under the act of "repair" or "production" is widely recommended in theories.

However, under this approach, it would be difficult to determine whether the patentee should be allowed to exercise the patent depending on whether the relevant act is an act of production or repair, if no physical change has been made to the patented product. Moreover, this approach, which uses the term "production" in a sense different from that of the term "production" as used in Article 2, paragraph (3), item (i) of the Patent Act, involves the risk of confusing the concept of production. Further, if the gist of such approach is to deny the exercise of patent by the patentee even where the whole or part of the components that constitute an essential portion of the patented product has been modified or replaced because such modification or replacement does not fall under the act of "production" in light of the normal use of the product, degree of modification, and the actual circumstances of the transactions involving the patented product, such approach can by no means be approved as a means to make a determination.

d. Whether a patented product has finished its service along with the lapse of its ordinary life as a product as prescribed as Type 1 Condition should be decided from a social or economic viewpoint, and in the following two cases, Type 1 Condition should be considered to be met: (a) where use of the relevant product becomes actually impossible due to reasons such as the physical wear of the component of the product or chemical change to the ingredient under the normal use of the product (typical cases); and (b) where a product can be used several times or over a long period in a physical or chemical sense but is limited in terms of the number of times or period it can be used from a health and hygiene perspective (e.g. disposable syringe and medicine), if such product has been used for the number of times or period specified, even if it can be used in a physical or chemical sense beyond the number or times or period limited, such product should be deemed to have finished its service in the common sense.

Among the abovementioned cases where Type 1 Condition is met, in the former case mentioned in (a) above, if a consumable component (e.g. batteries for electrical equipment and dust collecting filters for air conditioners) or some components with shorter lives than the product as a whole (e.g. light-bulbs for electrical equipment and waterproof packing for underwater equipment) are replaced, or if some components damaged are modified or replaced, if such

modification or replacement is found to be an act of repair under the normal use of the product, the product cannot be considered to have finished its service. In contrast to this, any act of making major modification or replacement to the main components of the product or of replacing most of the components should be deemed to be an act to unreasonably extend the life of the product beyond the scope of repair in the abovementioned sense, and thus it is appropriate to construe that the product has finished its service at the time when such modification or replacement was made. In this case, whether or not such modification or replacement falls under the act of repair under the normal use of the product should be decided by taking into consideration the relevant circumstances, such as the function of the relevant component to be performed in the product, the life of such component, the mode and degree of the modification made, the product's function, structure, quality of material, use, and mode of use, as well as the actual circumstances of the transactions involving the product, in a comprehensive manner. At the same time, whether the modification or replacement has been made to the main component or most of the components should not be decided from a technical standpoint based on the patented invention, but from the viewpoints such as the significance of the economic value or the quantitative ratio the component represents of the entire product.

In light of the fact that an exhaustion of a patent is admitted from the perspective of harmonization between the protection of inventions under the Patent Act and social and public interest (see the Supreme Court Judgment on the BBS Case), exhaustion of a patent should not be prevented by the patentee's intention. Therefore, even if a patented product is structured in a way such that the replacement of a consumable component or component with a short life is difficult (e.g. the battery case lid is hermetically sealed by welding), unless such structure is essential in light of the object of the patented invention or cannot be found in the same type of products in the technical field to which the patented product belongs, the act of replacing the component may be found to fall under the act of repair under the normal use of the product. In view of such point, the decision on whether the modification or replacement to the component made by a third party falls under the act of repair under the normal use of the product or whether the product has finished its service in terms of the completion of the number of times or period to be used, should be made by comprehensively taking into consideration the ordinary functions, structure, quality of material, use, and mode of use of the same type of products in the field to which the relevant product

belongs, as well as the actual circumstances of the transactions involving such products of the same type, in addition to the abovementioned circumstances concerning the patented product.

Further, it is appropriate to construe that the case where it is prescribed in laws and regulations, etc., or formed as a firm social consensus that use shall be limited to a certain number of times or period falls under the latter case as mentioned in (b) above. Therefore, the patentee's mere act of limiting the patented product's number of times or period to be used and indicating to that effect on the product does not lead to the conclusion that the product has finished its service by reaching such limitation.

e. Next, as mentioned above, Type 2 Condition refers to the case where a third party has made modification or replacement to the whole or part of the components that constitute an essential portion of the patented product. The meaning of the essential portion as mentioned here should be interpreted in the following manner.

A patent shall be granted to an invention which has succeeded in solving the problems that prior arts could not solve, by constitutions with novelty and inventive step (see Article 29 of the Patent Act). This means that the substantive value of the invention intended to be protected under the Patent Act lies in the act of disclosing the means based on an unconventional and specific technical idea to solve a technical problem which could not be solved by prior arts, with its specific constitutions. Therefore, among the constitutions stated in the scope of claims, the distinctive portion that constitutes the core of the technical idea underlying the specific means of the patented invention to solve the problem should be recognized as the essential portion of the patented invention. The patentee is granted an exclusive right in compensation for such disclosure mentioned above, and thus when a third party newly makes modification or replacement to the whole or part of the component that constitutes an essential portion of the patented invention, any feature which the patentee provided to the patented product in exchange for the exclusive right he/she acquired under the Patent Act would no longer remain and the product so modified or replaced can no longer be deemed to be identical to the patented product assigned by the patentee. Therefore, in such case, the patentee should be allowed to exercise the patent against such products. In contrast to this, even where a modification or replacement was made to a component related to the constitution stated in the scope of claims, if such component does not constitute an essential portion of the patented invention,

except for some cases where the patent may not be exhausted for satisfying Type 1 Condition, it should be construed, from the standpoint of Type 2 Condition, that the patentee should not be allowed to exercise the patent on the grounds that the identity of the patented product that the patentee had assigned has not been lost in the product modified or replaced.

(2) Facts found in this case

Then, as a result of examining whether or not the patentee should be allowed to exercise the patent for Invention 1, i.e. a product invention, against the appellee's products derived from the appellant's products for domestic sale, from the abovementioned perspective in this case, and combining the abovementioned "Basic facts" (see section 2. of No. 2) and the evidence listed below (the serial number for each evidence will be omitted), as well as the entire import of the oral argument, the following facts are found.

a. Scope of claims of Invention 1

The statements made in the scope of claims of Invention 1 as well as the details thereof listed as constituent features are as stated in the "Basic facts" above (see section 2.(2) of No. 2).

b. Statements in the Description (Exhibit Ko No. 2)

Regarding Invention 1, the following statements are found in the part "Detailed explanation of the invention" in the Description (note that, upon citation, some parts have been changed to the wordings used in official documents; at the same time, [figure 1] showing the prior arts in the Description and [figure 2] showing the working example of Invention 1 that have been enlarged and colored with names of the components added thereto, are attached as figure 1 and figure 2 in the attachments of this judgment).

(a) Technical field of the invention (paragraph [0001])

The present invention (note of the judgment: the invention pertaining to the Patent) relates to a liquid container, a method of manufacturing the container, the package of the container, an ink jet head cartridge in which the container and a recording head are made integral with each other, and a liquid discharge recording apparatus, and particularly to a liquid container suitably utilized in the field of ink jet recording or the like.

(b) Prior arts (paragraphs [0002] through [0008])

Generally, an ink tank functioning as a liquid container used in the field of ink jet recording is provided with a construction for adjusting the holding force of ink stored in the ink tank to carry out the supply of the ink favorably to a recording head for discharging the ink. This holding force is for making the pressure of the ink discharging

portion of the recording head negative relative to the atmosphere and is therefore called negative pressure.

As one of the easiest methods for generating such negative pressure, mention may be made of a method of providing a porous member such as urethane foam or an ink absorbing member such as felt in the ink tank, and utilizing the capillary force (ink absorbing force) of the ink absorbing member. For example, the Japanese Patent Publication No. HEI 6-15839 discloses a construction in which a plurality of fibers differing in density from one another are compressed and packed in the whole of an ink tank in the order, from high-density fiber to low-density fiber, toward a supply path to a recording head. The high-density fiber has a greater number of fibers per unit area and has a strong ink absorbing force, and the low-density fiber has a smaller number of fibers per unit area and has a weak ink absorbing force. The seams among the fibers are urged against each other so as to prevent the interruption of ink flow caused by the mixing of air.

On the other hand, the applicant of this application (note of the judgment: the appellant; hereinafter referred to as "the applicant") has proposed in the Japanese Patent Publications No. HEI 7-125232 and No. HEI 6-40043, etc., an ink tank provided with a liquid containing chamber of which the ink containing amount per unit volume is increased in spite of utilizing an ink absorbing member and which can realize stable ink supply.

Figure 1(a) is a schematic cross-sectional view showing the construction of an ink tank utilizing the above-described construction. The interior of an ink cartridge 10 is partitioned into two spaces by a partition wall 38 having a communicating hole (communicating portion) 40. One of the two spaces is a liquid containing chamber 36 hermetically sealed except for the communicating hole 40 on the partition wall 38 and directly holding ink 25 therein, and the other space is a negative pressure generating member containing chamber 34 containing a negative pressure generating member 32 therein. On a wall surface forming this negative pressure generating member containing chamber 34, an atmosphere communicating portion (atmosphere communicating port) 12 for effecting the introduction of the atmosphere into the container resulting from the consumption of ink, and a supply port 14 for supplying ink to a recording head portion, not shown in this figure, are formed. In figure 1, the area in which the negative pressure generating member holds the ink is indicated by diagonal lines (note of the judgment: the part indicated by diagonal lines and in yellow in figure 1(a) in the attachment of this judgment, and the part indicated by stippling and in green is the area where the negative pressure generative member does not hold ink).

The ink contained in the space is indicated by net lines (note of the judgment: the part indicated by net lines and in orange).

In the structure described above, when the ink in the negative pressure generating member 32 is consumed by the recording head, not shown in this figure, air is introduced from the atmosphere communicating port 12 into the negative pressure generating member containing chamber 34, and enters the liquid containing chamber 36 through the communicating hole 40 on the partition wall 38. In exchange of the air, the negative pressure generating member 32 in the negative pressure generating member containing chamber 34 is filled with the ink from the liquid containing chamber 36 through the communicating hole on the partition wall (this shall hereinafter be referred to as the "gas-liquid exchanging operation"). Accordingly, even if the ink is consumed by the recording head, the negative pressure generating member 32 is filled with the ink in conformity with the consumed amount, and the negative pressure generating member 32 holds a predetermined amount of ink therein and keeps the negative pressure relative to the recording head substantially constant and therefore, the ink supply to the recording head becomes stable. Such an ink tank which is compact and has high use efficiency has been commercialized by the applicant and is still used in practice.

In the example shown in figure 1(a), an atmosphere introducing groove 50 as a structure for expediting the introduction of the atmosphere is provided near the communicating portion between the negative pressure generating member containing chamber and the ink containing chamber, and a space (buffer chamber) 44 free of the negative pressure generating member is provided by ribs 42 near the atmosphere communicating portion (note of the judgment: the part indicated in blank form and in sky blue in figure 1(a) in the attachments of this judgment).

Also, the applicant has proposed in the Japanese Patent Publication No. HEI 8-20115 an ink tank using as the negative pressure generating member of the ink tank a fiber comprising olefin resin having thermoplasticity. This ink tank is excellent in ink storing stability and is also excellent in recycling property because the ink tank housing and the fibrous materials are formed of the same kind of materials.

(c) Problems to be solved by the invention (Paragraphs [0009] through [0013])

Now, the inventors (note of the judgment: the inventors of the invention pertaining to the Patent) have earnestly studied about a construction using fibrous materials as the negative pressure generating member of the ink tank shown in figure 1(a), and found that the following fact may pose a problem.

That is, supposing the state before the start of use, such as during distribution,

when the liquid containing chamber was positioned and left pointing upward in the direction of gravity toward the negative pressure generating member containing chamber, as shown in figure 1(b), it was found that by the air (note of the judgment: the blank part of the liquid containing chamber 36 indicated in sky blue in figure 1(b) in the attachment of this judgment) being introduced into the liquid containing chamber through the communicating portion, the liquid in the liquid containing chamber may leak to the negative pressure generating member and the ink 25 (note of the judgment: the lower left part indicated in red in figure 1(b)) may overflow to the buffer chamber. If the ink thus overflows to the buffer chamber, the ink may overflow through the atmosphere communicating port and thereby stain the user's hand or the ink may drop from the liquid supply port to stain the user's hand, etc., when the seal is broken.

The abovementioned problem is considered to arise from the following characteristics of the ink absorbing member using fibers, as compared with a porous material such as conventional urethane foam: (i) since porosity is great, the pressure loss of ink movement is small; (ii) the difference between the advancing angle of contact and the retreating angle of contact of the ink with the fiber is small; and (iii) in the case of the ink absorbing member using fibers, a capillary force is created in the gaps among the fibers and therefore, the difference in the local strength of the capillary force on the scale of the cell (about 80 to 120 μm) of urethane sponge is small, as compared with an ink absorbing member formed by a cell film being removed after urethane foam is foamed. This problem peculiar to a construction utilizing fibrous materials as a negative pressure generating member was recognized by the inventors for the first time.

The first object of the present invention is to provide a liquid container which utilizes fibrous materials as a negative pressure generating member and yet solves the abovementioned problem.

The second object of the present invention is to provide a liquid container with a liquid containing chamber having both the compactness and high use efficiency as described above and also free of inadvertent inflow of liquid from the liquid containing chamber to a negative pressure generating member containing chamber during non-use, on the basis of an unconventional, novel idea discovered in the inventors' study for achieving the abovementioned first-object, i.e. the relation between the hardness and interface of the two negative pressure generating members when they are urged against each other.

(d) Means to solve the problem (paragraphs [0015], [0019] and [0020])

Specific means for achieving the abovementioned objects can be understood from the following construction.

The liquid container of the present invention is characterized by the feature where in a negative pressure generating member containing chamber, between a first negative pressure generating member on the side of a communicating portion with a liquid containing chamber and a second negative pressure generating member on the side of an atmosphere communicating portion, there is a boundary layer of a capillary force stronger than the capillary force of the second negative pressure generating member, and is structured such that the atmosphere communicating portion and the communicating portion with the liquid containing chamber communicate with each other through this layer without fail. The liquid container is also characterized by the state before the start of use, such as during distribution, in that whatever direction the ink tank may be left, the difference between the capillary force of the second negative pressure generating member and the capillary force of the boundary layer is equal to or greater than the difference between the water head of the ink-atmosphere interface in the second negative pressure generating member and the water head of the ink-atmosphere interface of the boundary layer.

In the construction described above, the ink-atmosphere interface sometimes flows in the second negative pressure generating member, but this never happens with the ink-atmosphere interface in the boundary layer, because the ink in the boundary layer is always held by a capillary force equal to or greater than the difference in the water head from the ink in the second negative pressure generating member. Thus, the boundary layer is always filled with ink and therefore, the atmosphere can be prevented from flowing into the first negative pressure generating member and the liquid containing chamber through the boundary layer. Accordingly, ink exceeding the amount of ink which can be held in the negative pressure generating member containing chamber can be suppressed from flowing in from the liquid containing chamber, thereby achieving the first object.

(e) First embodiment (paragraphs [0037], and [0039] through [0052])

The details of some embodiments of the present invention shall hereinafter be described with reference to the drawings.

In each cross-sectional view, the areas in which negative pressure generating members hold ink are indicated by diagonal lines (note of the judgment: the parts indicated by diagonal lines and in yellow in figure 2 in the attachments of this judgment. Among such parts, the part in downward sloping diagonal lines from top right to bottom left shows the first negative pressure generating member and the part in the downward sloping diagonal lines from top left to bottom right shows the second negative pressure generating member. In addition, the part indicated by stippling and in green shows the

area where the second negative pressure generating member does not hold ink), and the ink contained in a space is indicated by net lines (note of the judgment: the part indicated by net lines and in orange).

Figure 2 is a schematic illustrations of a liquid container according to the first embodiment of the present invention (note of the judgment: the "first embodiment" as referred to in the Description is found to be the embodiment of Invention 1), with figure (a) being a cross-sectional view while figure (b) being cross-sectional view when the liquid containing chamber side of the container is upward.

In figure 2(a), the liquid container (ink tank) 100 is partitioned by a partition wall 138 into (i) a negative pressure generating member containing chamber 134 communicating in the upper portion thereof with the atmosphere through an atmosphere communicating port 112 and communicating in the lower portion thereof with an ink supply port and containing negative pressure generating members therein, and (ii) a substantially hermetically sealed liquid containing chamber 136 containing ink as liquid therein. The negative pressure generating member containing chamber 134 and the liquid containing chamber 136 communicate with each other only through a communicating portion 140 formed on the partition wall 138 near the bottom of the ink tank 100, and an atmosphere introduction path 150 for expediting the introduction of atmosphere into the liquid containing chamber during the liquid supplying operation. A plurality of ribs are integrally formed in an inwardly protruding form on the upper wall of the ink tank 100 which defines the negative pressure generating member containing chamber 134, and bear against negative pressure generating members contained in the negative pressure generating member containing chamber 134 in compressed state. By these ribs, an air buffer chamber (note of the judgment: the part indicated in blank form and in sky blue in figure 2(a) in the attachments of this judgment) is formed between the upper wall and the upper surfaces of the negative pressure generating members.

Also, an urging member 146 higher in capillary force and greater in physical strength than the negative pressure generating members is provided in an ink supply cylinder provided with a supply port 114, and is urged against the negative pressure generating members.

As the negative pressure generating members, two capillary force generating type negative pressure generating members, i.e. first negative pressure 132B and second negative pressure generating member 132A formed of fibers of olefin resin such as polyethylene, are contained in the negative pressure generating member containing chamber in the present embodiment. The reference character 132C designates the boundary layer between these two negative pressure generating members (note of the

judgment: the part indicated in red heavy line in figure 2 in the attachments of this judgment), and that portion of the boundary later 132C which intersects with the partition wall 138 is present above the upper end portion of the atmosphere introduction path 150 in the posture of the liquid container during its use in which the communicating portion is downward (figure 2(a)). Also, the ink contained in the negative pressure generating members is present up to above the abovementioned boundary layer 132C, as indicated by the liquid surface L of the ink.

The boundary layer between the first negative pressure generating member and the second negative pressure generating member is urged against each other, and the vicinity of the boundary layer between the negative pressure generating members shows higher compressibility and stronger capillary force as compared with the other regions. That is, when the capillary force of the first negative pressure generating member is defined as P_1 with the capillary force of the second negative pressure generating member being defined as P_2 and the capillary force of the interface between the negative pressure generating members being defined as P_s, the strength of the capillary force is as follows: $P_2 < P_1 < P_s$.

The state of the liquid contained in such a liquid container when its posture has been changed during its non-use will now be described with reference to figure 2(b).

Figure 2(b) shows a posture in which the liquid containing chamber is vertically upward as may occur, for example, during distribution, etc. When the liquid container is left in such a posture, the ink in the negative pressure generating members moves from a portion in which the capillary force is low to a portion in which the capillary force is high, and a water head difference is created between the water head of the ink-atmosphere interface L and the water head of the ink contained in the boundary layer 132C between the negative pressure generating members. Here, when this water head difference is greater than the difference between the capillary forces P_2 and P_s, the ink contained in the interface 132C tries to flow into the second negative pressure generating member 132A until this water head difference becomes equal to the difference between the capillary forces P_2 and P_s.

In the ink tank of the present embodiment, however, the water head difference h is smaller than (or equal to) the difference between the capillary forces P_2 and P_s and therefore, the ink contained in the interface 132C is held and the amount of ink contained in the second negative pressure generating member does not increase.

In the case of other postures, the difference between the water head of the ink-atmosphere interface L and the water head of the ink contained in the interface 132C between the negative pressure generating members becomes still smaller than the

difference between the capillary forces P_2 and P_s and therefore, the interface 132C can keep a state in which it has ink in the whole area thereof, irrespective of its posture. Therefore, in any posture, the interface 132C cooperates with the partition wall and the ink contained in the negative pressure generating member containing chamber to function as gas introduction blocking means for blocking the introduction of gas from the communication portion 140 and the atmosphere introduction path 150 into the liquid containing chamber and thus, it never happens that the ink overflows from the negative pressure generating members.

In the case of the present embodiment, the first negative pressure generating member is a capillary force generating type negative pressure generating member (P_1 = -110 mm Aq.) using an olefin resin fiber material (2 deniers), and the hardness thereof is 0.69 kgf/mm. (The hardness of the capillary force generating member was found by measuring the repulsion when it was pushed in by a push bar of Ø 15 mm in a state in which it was contained in the negative pressure generating member containing chamber, and the inclination of the repulsion to the amount of push-in). On the other hand, the second negative pressure generating member is a capillary force generating type negative pressure generating member using the same olefin resin fiber material as that of the first negative pressure generating member, but is weaker in capillary force (P_2 = -80 mm Aq.), greater in the fiber diameter (6 deniers), and higher in the rigidity of the absorbing member (1.88 kgf/mm).

The capillary force generating members are combined so that as described above, the negative pressure generating member weaker in capillary force may become harder relative to the negative pressure generating member higher in capillary force, and they are urged against each other, whereby the interface between the negative pressure generating members in the present embodiment can make a difference in the strength of the capillary forces ($P_2 < P_1 < P_s$) by the first negative pressure generating member being crushed. Further, the difference between P_2 and P_s can be made equal to or greater than the difference between P_2 and P_1 without fail and therefore, as compared with a case where the two negative pressure generating members are simply made to bear against each other, the ink can be reliably held in the boundary layer between the capillary force generating members.

In the present embodiment, in which a boundary layer strong in capillary force is provided as described above, even if the ranges of the capillary forces P_1 and P_2 taking the irregularity of density into account overlap with each other due to the irregularity of density in the negative pressure generating members, the inadvertent inflow of the ink into the negative pressure generating member containing chamber during non-use as

described above can be prevented because the interface has a capillary force satisfying the abovementioned conditions.

Here, the capillary forces of the two negative pressure generating members themselves can suitably assume desired values so as to make the ink supply characteristics during use excellent in a state in which the conditions, $P_1 < P_s$ and $P_2 < P_s$, are satisfied. In the present embodiment, by realizing the state of $P_2 < P_1$, the influence of irregularity of the capillary forces of the capillary force generating members themselves is suppressed during the use of the liquid container, and the ink contained in the upper negative pressure generating member is reliably consumed to thereby make the ink supply characteristics excellent.

(f) Second embodiment (paragraph [0105])

A method of injecting liquid will be described. Taking the case of the first embodiment as an example, a container containing no liquid therein is prepared, and the liquid containing chamber thereof is filled with liquid and the negative pressure generating member containing chamber thereof is filled with an amount of liquid which can be constantly held by the entire boundary layer between the negative pressure generating members irrespective of the posture of the liquid container. The liquid container into which a predetermined amount of liquid has been injected in such a manner becomes such that the boundary layer can function as a gas introduction blocking means. A publicly known method can be utilized as the method of injecting liquid into the respective chambers.

(g) Effect of the invention (paragraph [0127])

As described above, according to the first invention of this application (note of the judgment: Invention 1), the liquid is always contained in the negative pressure generating members near the communicating portion, and this can block the introduction of gas from the communicating portion into the liquid containing chamber except during the supply of liquid from the liquid supplying portion to the outside, which makes it possible to provide an ink tank that can provide the stable supply of ink even after being distributed in the state before the start of use.

c. Prior arts (Exhibits Ko No. 2 and No. 20, and Exhibits Otsu No. 50 to No. 53)

The ink tanks for ink jet printers, which were in the public domain prior to the day on which priority was claimed in regard to the patent application for Invention 1 (May 11, 1998; provided, however that the day of filing for the Patent is April 27, 1999), are as follows, including those stated in b.(b) above disclosed in the Description.

(a) An ink tank with only one chamber (an ink tank wherein the chamber is not separated into a negative pressure generating member containing chamber and a liquid

containing chamber as in the case of Invention 1) which:

(i) contains one negative pressure generating member with uniform capillary force;

(ii) contains only one negative pressure generating member but in a manner so that the portion near to the ink supply port for the printer has a capillary force higher than other portions (with an object to securely and stably supply ink held in the negative pressure generating member, including the ink existing in an area far away from the ink supply port); or

(iii) contains multiple negative pressure generating members where the capillary force of the negative pressure generating member located near to the ink supply port is higher than that of other negative pressure generating members (with an object to make an ink tank a simple shape that is capable of storing sufficient amount of ink to enable stable ink supply)

(b) An ink tank where several chambers are formed by partitioning the inside thereof by walls, which:

(i) contains negative pressure generating members in several chambers;

(ii) has established in parallel a chamber containing a negative pressure generating member (wherein one chamber contains one negative pressure generating member) and a chamber containing ink only (with an object to increase the ink tank's ink containing amount per unit volume and achieve stable ink supply); or

(iii) is an ink tank mentioned in (ii) above, with an openable and closable lid member fixed on the top of a chamber (with an object to enable refilling of the ink tank with ink and realize the long-use of the ink tank, thereby eliminating disposal of used ink tanks and preventing environmental pollution beforehand).

d. The appellant's products (Exhibits Ko No. 7, No. 9, No. 10, No. 15. No. 17 to No. 21, No. 37, No. 45, and No. 46, and Exhibits Otsu No. 48 and No. 59)

(a) The appellant's products fall within the technical scope of Invention 1, where the negative pressure generating member containing chamber in the ink tank contains a first negative pressure generating member on the ink supply port side and a second negative pressure generating member on the atmosphere communicating port side. The first and second negative pressure generating members are urged against each other, with the capillary force of the interface of such urged portions being higher than the capillary forces of the negative pressure generating members themselves (Constituent Feature H). Between the first and second negative pressure generating members, the first negative pressure generating member has a higher capillary force.

Regarding the state of the appellant's product before the start of use, the whole

liquid containing chamber is filled with ink, while the whole of the first negative pressure generating member and part of the second negative pressure generating member in the negative pressure generating member containing chamber are filled with ink as well as the entire interface of the urged portions between the negative pressure generating members holding ink (Constituent Feature K). Negative pressure generating members are formed of fibrous materials, wherein numerous microscopic pores are formed. In the first and second negative pressure generating members as well as the interface of the urged portions between them, ink is held in such pores. On the other hand, part of the second negative pressure generating member and buffer chamber are not filled with ink, and in these portions air is present.

When the appellant's products are installed in ink jet printers and used for printing, the ink held inside decreases with ink being supplied from the ink supply port, and when a certain amount has been used, part or the whole of the interface of the urged portions no longer holds ink. Yet, printing remains possible even after that point of time.

In regard to the used appellant's products (which refers to the appellant's products where ink is almost used up and which are incapable of further printing), there remains a small amount of ink on the wall surface of the liquid containing chamber, inside the first and second negative pressure generating members, interface of the urged portions between the two negative pressure generating members, ink supply port and other portions. In such case, inside the negative pressure generating members including the urged portions, some of the ink held in the microscopic pores formed in the fibrous materials as mentioned above remains in each pore in an uneven manner.

(b) When the used appellant's products are removed from the printers, the ink remaining inside the ink tank as mentioned in (a) above further dries with the passage of time, and after a week to 10 days from the removal, dried and hardened ink is adhered to the abovementioned wall surface, inside the negative pressure generating members, interface of the urged portions, ink supply port and other portions. If one tries to refill ink tanks in such condition with ink, since dried and hardened ink is adhered to the numerous microscopic pores in an uneven manner inside the fibrous material of the negative pressure generating members including their urged portions, not only the ink holding function of the negative pressure generating members suffers a decline, but also the function to form a wall to prevent the movement of air would be impaired.

Moreover, sometimes dust intrudes and adheres to the atmosphere communicating port or liquid supply port in the used appellant's products. Such dried ink or dust may cause clogging of the ink flow passage or the nozzle of the printer head.

As described above, if used ink tanks were to be reused by refilling them with ink, not only the performance of the ink tank itself would decline, but also deterioration in the printing quality or breakdown of the printer itself may occur. In order to prevent such situation from occurring, the applicant designed the ink tanks for a single use (where the used ink tanks would not be used again by any means such as refilling them with ink after cleaning, but would be replaced with new ones).

(c) The appellant, while indicating that the applicant's products are for a single use, called on the users of the appellant's products for cooperation in collecting used ink tanks by making the following statements directed to them: (i) such statement as "Your cooperation for the collection of used ink tanks and BJ cartridges manufactured by Canon is greatly appreciated. The collection points in Japan can be checked from the website below" or "Please bring the used cartridges to the retail shops with this mark (note of the judgment: mark that indicates shops cooperating in the collection of cartridges manufactured by Canon). They will be recycled as resources. Thank you for your cooperation.," indicated on the packages of the appellant's products; (ii) such statement as "When the ink tank is empty, please replace the ink tank with a new one promptly," "Please use a new ink tank for replacement," "Refilling the used ink tank with ink is not recommended," or "Canon is promoting the collection of used ink tanks and BJ cartridges to reuse them as resources. This collection activity is supported by your cooperation.," indicated in the instruction manual for ink jet printers manufactured by the appellant in which the appellant's products would be used; or (iii) such statement as "Canon (i.e. the appellant) led the industry in collecting ink tanks in 1996. As of June 2003, about 3,000 shops are cooperating in this collection activity and the collection amounts are in an increase year by year. The ink tanks collected are gathered at the Canon Recycle Operation Center, and are fully used effectively.," indicated on the appellant's website.

e. The appellee's products (Exhibits Ko No. 8, No. 21, No. 28, No. 29, No. 36, No. 49, and No. 58, and Exhibits Otsu No. 30, No. 44, No. 47, No. 48 and No. 58)

(a) The appellee's products are manufactured by Company C through the following steps after Company B has collected the Ink Tank Cartridges remaining after the ink initially filled in the appellant's products has been used up: (i) a step of opening a hole on the upper surface of the liquid containing chamber of the Ink Tank Cartridge; (ii) a step of cleaning inside the Ink Tank Cartridge; (iii) a step of applying measures to prevent ink leakage from the ink supply port of the Ink Tank Cartridge; (iv) a step of injecting ink from the hole mentioned in (i) into the negative pressure generating member containing chamber to a point above the interface of the urged portions

between the negative pressure generating members, and into the whole liquid containing chamber; (v) a step of plugging the hole mentioned (i) above and the ink supply port; and (vi) a step of fixing labels, etc.

In regard to step (ii) mentioned above, the appellee alleges that some of the appellee's products are manufactured by cleaning inside the Ink Tank Cartridge in the process of recycling, but some are not. However, in regard to this point, Exhibit Otsu No. 47 (which is a CD-ROM wherein the process of manufacturing the appellee's products from the used appellant's products by Company C is alleged to have been filmed) and Exhibits Otsu No. 56-1 and No. 56-2 (which are reports on the manufacturing process used by recycling operators other than Company C) are less than sufficient to have appropriate probative value of evidence, in light of the evidence listed above as well as the entire import of the oral argument, and further, there is no other evidence sufficient enough to find the appellee's allegations appropriate to reverse the findings made in (ii) above.

The abovementioned series of steps fall within the technical scope of Invention 10 and thus the appellee's products fall within the technical scope of Invention 1.

(b) In regard to the appellee's products, while the liquid containing chamber is almost filled with ink, the negative pressure generating member containing chamber is also filled with ink to a point above the interface of the urged portions between the first and second negative pressure generating members. Accordingly, irrespective of the posture of the ink tank, the entire interface of the urged portions can hold ink.

f. Situation of recycling of ink tanks for ink jet printers (Exhibits Ko No. 9 to No. 14, No. 16, No. 21 to No. 28, No. 36, No. 38, No. 41, No. 42, No. 48 to No. 51, No. 66, and No. 67 and Exhibits Otsu No. 3 to No. 6, No. 16 to No. 22, No. 24, No. 29, No. 31 to No. 38, No. 44 to No. 49, No. 54, No. 56, No. 60 to No. 70, No. 77, No. 78 and No. 80)

(a) Manufacturers of ink jet printers including the appellant are engaged in the sale of ink tanks to be used for the printers they manufacture (which are generally called "genuine products").

Meanwhile several recycling operators are engaged in the sale of ink tanks which are manufactured by refilling used genuine ink tanks with ink (which are generally called "recycled products"), and the appellee's products are one of such recycled products. Such operators use almost the same process to manufacture these recycled products as that used by Company C in manufacturing the appellee's products. At the same time, new ink tanks manufactured by entities other than the manufactures of genuine products (which are generally called "compatible products") and ink to be used by ink tank users for refilling (which are generally called "refill ink") are sold.

There is, however, no evidence showing that the manufacturers of genuine products including the appellant are engaged in the manufacture and sale of recycled products or refill ink.

Recycled ink tanks for ink jet printers as well as refill ink therefor are also sold in the U.S. and European countries.

According to a questionnaire survey conducted online by BCN Inc., in April 2004, about 9% of the users of ink jet printers used recycled products (this figure would increase to about 18% if users who have used recycled products in the past were included) and about 33% of such ink jet printer users showed their intention to use recycled products in the future. Moreover, a similar survey conducted in February 2005 revealed that about 12% of such users were using recycled products (this figure would increase to about 23% (id.)) with about 33% of them showing their intention for future use. On the other hand, according to a survey conducted on the sales volume of ink tanks for ink jet printers by the same company, the proportion of recycled products sold during the period from March to December in 2004, accounted for about 3%.

(b) When the appellant's products (genuine products) and the recycled products are compared in terms of retail price per product, while the genuine products are sold at about 800 to 1,000 yen, the recycled products are sold at about 600 to 700 yen.

When printing results are compared where both products are used for printing by ink jet printers, if printing is made on plain paper, while no big difference is found in color development and coloring (such difference could be found if the image was enlarged and looked at closely, but remains at a level with no problems in practical use), a difference is found in quality in that the recycled products are inferior in natural light durability. Moreover, the recycled products show inferior quality in color development and coloring, in the case of photo printing. Further, it has been pointed out that the use of recycled products may cause troubles in the printer, such as clogging.

(c) As mentioned in d.(c) above, the appellant has been calling on the users of the appellant's products for cooperation in collecting used ink tanks, through the indication on the packages of the appellant's products and website, etc. The appellant is, after sorting out the collected used ink tanks, using them for substitute supplementary fuel for part of the main fuel, coal, as heat source in the process of manufacture of cement. Further, the cinders are used in mixture with the primary material for cement, and thus the appellant never disposes of used ink tanks.

At the same time, manufacturers of genuine products other than the appellant are also engaged in the collection and recycling of used products. Moreover, some recycling operators collect used ink tanks with or without charge.

According to the abovementioned surveys conducted by BCN Inc., while about 48% of users disposed of the used ink tanks as domestic waste and about 46% of the users returned them in the collection box installed by the manufacturers in the April 2004 survey, the respective percentages changed to about 42% and about 51% in the February 2005 survey.

(3) Whether Type 1 Condition is met

Based on the abovementioned facts, in respect of the appellant's products, this court shall first determine whether or not a patented product would be deemed to have finished its service along with the lapse of its ordinary life as a product, with the ink initially filled in being used up.

a. Conditions of the appellant's products after the ink has been used up

When the appellant's products are installed and used in ink jet printers and the ink initially filled in has been used up, no further printing can be made. In the used appellant's products whose ink has been used up, except for the ink adhered to the wall surface of the inside of the ink tanks, as well as to the negative pressure generating members, the ink which had been initially injected no longer exists. Yet, since no physical change has been added to the components other than ink, as well as to the structure of the first and second negative pressure generating members and the interface of the urged portions, such appellant's products can be used for printing by an ink jet printer if they are refilled with ink, and thus are in a state reusable as an ink container. Ink indeed is a consumable component, and thus when attention is focused on the ink tank cartridge of the appellant's products, the act of refilling with ink the appellant's products whose ink has been used up can be deemed to be an act of replacement of a consumable component under the normal use of ink tanks.

b. Details of the modification, etc. made to the Ink Tank Cartridge after the ink has been used up

As mentioned in (2)e.(a), Company C's process to manufacture the appellee's products by using the appellant's products whose ink has been used up involves the following steps: (i) a step of opening a hole on the upper surface of the liquid containing chamber of the Ink Tank Cartridge; (ii) a step of cleaning inside the Ink Tank Cartridge; (iii) a step of applying measures to prevent ink leakage from the ink supply port of the Ink Tank Cartridge; (iv) a step of injecting ink from the hole mentioned in (i) into the negative pressure generating member containing chamber to a point above the interface of the urged portions between the negative pressure generating members, and into the whole liquid containing chamber; (v) a step of plugging the hole mentioned (i) above and the ink supply port; and (vi) a step of fixing labels, etc.

As no opening for ink refill is made in the appellant's products, in the abovementioned process, a hole for cleaning and injecting ink is opened on the upper surface of the liquid containing chamber and subsequently closed after the inside of the ink tank is cleaned and ink is injected. Yet, the structure where no hole for ink refill is opened in the appellant's product cannot be found inevitable in light of the object of Invention 1. Indeed, the structure where the liquid containing chamber is a substantially hermetically sealed space is defined as one of the constituent features of Invention 1 (Constituent Feature B), and this constituent feature has a technical significance in achieving the object of Invention 1 (if the liquid containing chamber is not hermetically sealed, air would flow in and cause ink leakage). In the case of a product where the exterior portion is covered by a sealing cover such as waterproof equipment, generally this hermetically sealed state is temporarily broken to replace a consumable component or to repair any internal component (for example, when batteries which are consumable components are to be replaced for waterproof watch, the cover would be opened thereby temporarily breaking the hermetically sealed state). Even if the liquid containing chamber must be a hermetically sealed space, it is not an inevitable construction that no opening for ink refill in the Ink Tank Cartridge be opened (actually, according to the entire import of the oral argument, some of the appellant's products do not require a new hole to be opened because a hole, which has been established on the liquid containing chamber at the time of initially filling it with ink and covered by a plastic ball-shaped component, can serve as an opening for refilling it with ink by pressing such component into the liquid containing chamber or removing it). Therefore, the fact that a step of opening a hole in the Ink Tank Cartridge is involved in the process of manufacturing the appellee's products cannot lead to the conclusion that Company C's act does not fall under the act of replacement of a consumable component. Further, as mentioned in (2) f. above, in the field of ink for ink jet printers, used genuine ink tanks refilled with ink (i.e. recycled products) are sold. In light of the fact that the process to manufacture such products is almost the same as that for the appellee's products, the involvement of the step of opening a hole in the Ink Tank Cartridge upon manufacturing the appellee's products cannot serve as a ground to conclude that such manufacturing process does not fall under the act of replacement of a consumable component.

c. Situation of recycling in the field of ink for ink jet printers

As mentioned in (2)f. above, in the field of ink for ink jet printers, not only genuine products including the appellant's products, but also recycled products and refill ink are sold. Moreover, although the recycled products are inferior to genuine products in

quality, more than a few users exist for such recycled products due to their cheap prices. Reuse of used products without disposing of them contributes to the conservation of the environment and should be encouraged unless it infringes upon another party's patent or other rights or interest. No laws or regulations prohibit the reuse of used ink tanks.

In this regard, the appellant alleges that the appellee's act does not contribute to the reuse of resource or conservation of the environment but rather is a backward movement to the establishment of a sound material-cycle society.

Considering this point, conservation of the environment is essential for ensuring healthy and cultural life for both the present and future generations of the nation, as well as the wellbeing of all humankind (see Article 1, Article 3 and other relevant provisions of the Basic Environment Act). The establishment of a sound material-cycle society, which is a society in which the consumption of natural resources will be conserved and the environmental load will be reduced to the greatest extent possible, by preventing or reducing the generation of wastes, etc. from products, etc., by promoting proper cyclical use of products, etc. when these products, etc. have become circulative resources, and by ensuring proper disposal of circulative resources not put into cyclical use (the term "wastes, etc." means, in addition to the wastes defined in Article 2, paragraph (1) of the Waste Management and Public Cleansing Act, products, etc. that are collected or disposed of after being used or without being used, the term "circulative resources" means useful things among wastes, etc., and the term "cyclical use" means reuse, reclamation, and heat recovery.), should be promoted as a responsibility of the state, local government, business operators, and citizens (see Article 1, Article 2 and other provisions of the Basic Act on Establishing a Sound Material-Cycle Society).

A cyclical use of circulative resources to be conducted in a sound material-cycle society is not limited to reuse (which means to use circulative resource as is, as products, or after conducting repairs, or in their entirety or in part as components or parts of products) and reclamation (which means to use circulative resources in their entirety or in part as raw materials), but includes heat recovery (which means to use, for obtaining heat, things that are circulative resources in their entirety or in part and that can be used for combustion, or that potentially have such use) (paragraphs (4) through (7) of Article 2 of the Basic Act on Establishing a Sound Material-Cycle Society; in addition, see Article 1 and Article 2 of the Act on the Promotion of Effective Utilization of Resources). The act of collecting the used appellant's products and using them as heat source agrees with the philosophy of conservation of the environment. In this case, the appellant has called on the users of the appellant's products for cooperation in collecting the used appellant's products and has actually collected a certain amount of such used

products and has used them as supplementary fuel in the manufacture of cement, as found above (see (2)d.(c) and (2)f.(c) above).

However, the appellee's products, which are manufactured by using the used appellant's products as ink tanks without disposing of them, can reduce the volume of ink tanks to be disposed of by using the same ink tanks several times. The use of used products as heat source helps reverse the adverse effects to the natural environment in comparison to the acts of leaving such used products as wastes above ground, burying them underground or burning them by incineration equipment with inferior incineration capacity. Nevertheless, taking into consideration the efficient use of finite fossil fuel resource and reduction of carbon dioxide emissions, such use of used products as heat sources is obviously inferior to the reuse of such products in terms of a cyclical use of circulative resources. Moreover, based on the fact that the Ink Tank Cartridges used for the appellee's products have been manufactured by the appellant, even if ink has been injected therein again and such Ink Tank Cartridges become the appellee's products, they would also be collected, after having been used, as the used Ink Tank Cartridges manufactured by the appellant and used as a heat source.

Then, even if the circumstances are taken into consideration that the appellant has not only indicated that the appellant's products are ink tanks for single use, but also, for the promotion of the collection of used products, has called on the users of the appellant's products for cooperation in the collection of used ink tanks with statements to that effect indicated on the appellant's product packages, instruction manual of ink jet printers manufactured by the appellant or the appellant's website, in light of the abovementioned situation, it has not become a firm social consensus that the use of ink tank is limited to one time.

d. Summary

Based on the abovementioned findings, the act of refilling with ink the Ink Tank Cartridges of the appellant's products after the ink has been used up can be deemed to be an act of replacement of consumable component under the normal use of ink tanks, when such act is examined from the standpoint as to whether or not the relevant product has finished its service as a product, based on a patented product. Moreover, it is neither provided for in laws and regulations, etc. that the use of Ink Tank Cartridges is limited to the use of ink initially injected, nor has it become a firm social consensus, and thus the fact that the ink initially injected therein has been used up does not lead to the conclusion that a patented product has finished its service along with the lapse of its ordinary life as a product.

Therefore, in this case, the Type 1 Condition, where a patent would not be

exhausted, is not met.

(4) Whether Type 2 condition is met

Next, in respect of the appellant's products, this court will determine whether or not a third party (Company C) has made modification or replacement to the whole or part of the components that constitute an essential portion of the patented invention (Invention 1) involved in the patented product (appellant's products).

a. Contents of Invention 1

Invention 1 relates to ink tanks, etc. used for ink jet printers. According to the facts found above, the contents of the patented invention can be understood as follows.

(a) The most simple construction of ink tanks would be one where ink will be directly injected into the space inside a box. However, this construction would cause ink leakage when the seal is broken, and thus obviously suffers from unstable ink supply to printers. To hold ink inside the ink tank without any external leakage and supply ink in a stable manner, a new ink tank was invented where negative pressure generating members (a component that absorbs ink such as sponge or felt) is contained in the space inside the box and impregnated with ink. Yet, if the negative pressure generating members were contained inside the entire ink tank, the amount of ink containable inside the ink tank would be reduced. To solve this problem, another ink tank was invented where the ink containing amount per unit volume of the tank is increased and which realizes stable ink supply by adopting a construction where the interior of the ink tank is separated into several chambers by partition walls and on the side of the ink supply port to the printer, a negative pressure generating member is contained and impregnated with ink, while the other portions of the ink tank do not contain negative pressure generating members and ink is directly injected into the space inside the box (see (2)b.(b) above). This has been mentioned as prior art in the Description (stated in figure 1 in the attachments of this judgment).

However, ink tanks manufactured by prior art involved the following problems. Specifically, in these ink tanks, ink is contained in the whole of the liquid containing chamber 36 (this number shows the numeral attached to figure 1 in the attachments of this judgment; the same shall apply hereinafter) (the part indicated by net lines in orange in figure 1(a)) and part of the negative pressure generating member containing chamber 34 (the part indicated by diagonal lines in yellow in said figure), while air is present in other portions of the negative pressure generating member containing chamber (the portion of the negative pressure generating member 32 which is not impregnated with ink that is indicated by stippling in green and the portion of the buffer chamber 44 indicated in blank form and in sky blue in said figure). When this ink

tank is left in a posture where the negative pressure generating member containing chamber comes down below the liquid containing chamber before the start of use (when the ink tank is to be installed and used in the printer, the negative pressure generating member containing chamber and liquid containing chamber come abreast of each other as shown in figure 1(a) in the attachments of this judgment, while the ink tank may be left in a posture where the liquid containing chamber is positioned above the negative pressure generating member containing chamber before the start of use, such as during the transportation or storage, as shown in figure 1(b) in the attachments of this judgment), the air existent in the negative pressure generating member containing chamber is introduced to the liquid containing chamber through the communicating hole 40 (the portion of the liquid containing chamber 36 indicated in blank form and in sky blue in figure 1(b)). Then, due to the gas-liquid exchanging operation, the ink contained inside the liquid containing chamber flows into the negative pressure generating member containing chamber in exchange of the air, and thereby generates the state of overfilling, i.e. a state where ink 25 exists in large excess in the negative pressure generating member containing chamber. Then, not only the area of the negative pressure generating member which was not impregnated with ink would be impregnated with ink, but also, when the negative pressure generating member can no longer hold ink, ink would overflow into the buffer chamber as shown in the bottom-left corner portion indicated in red in figure 1(b). When the seals of ink tanks are opened under this state, ink would leak from the atmosphere communicating port 12 or liquid supply port 14 and stain the users' hands. Therefore, it is necessary to prevent ink from being injected in excess into the negative pressure generating member containing chamber, irrespective of the posture of the ink tank at the time of transportation or storage, which was defined as the problem to be solved by Invention 1.

(b) By adopting the following construction, Invention 1 solved the abovementioned problems found in conventional ink tanks, while maintaining the working effect of conventional ink tanks, i.e. increasing the ink containing amount per unit volume of the ink tank and achieving stable ink supply.

The ink tank of Invention 1 has a construction where two negative pressure generating members are contained in the negative pressure generating member containing chamber 134 (this number shows the numeral attached to figure 2 in the attachments of this judgment; the same shall apply hereinafter) (first negative pressure generating member 132B on the side of ink supply port 114 and second negative pressure generating member 132A on the side of atmosphere communicating port 112; the positional relationship of the negative pressure generating members contained,

partition wall of the liquid container, communicating port, and atmosphere communicating port are as described in Constituent Features E through G) and are urged against each other (Constituent Feature A) and thereby the interface of the urged portions, i.e. boundary layer 132C (the part indicated in red heavy line in figure 2 in the attachments of this judgment) has the highest capillary force in comparison to the first and second negative pressure generating members (Constituent Feature H). A high capillary force means easy absorption and holding of liquid, and thus by containing a predetermined amount of ink in the negative pressure generating member containing chamber (Constituent Feature K), the interface of the urged portions would always hold ink, and this ink would form a barrier which blocks the movement of air. As a result, the air existent in part of the negative pressure generating member containing chamber (the area of the second negative pressure generating member which is not impregnated with ink that is indicated by stippling in green and the portion of the buffer chamber indicated in blank form and in sky blue in figure 2) would not be able to move to the side of the first negative pressure generating member over this barrier nor to the liquid containing chamber. Accordingly, even if the ink tanks are left in a posture found problematic in the prior art, during transportation or storage (a posture where the liquid containing chamber 136 comes above the negative pressure generating member containing chamber 134 as shown in figure 2(b) in the attachments of this judgment), air would not flow into the liquid containing chamber and thereby prevent the flow of ink in the liquid containing chamber into the negative pressure generating member containing chamber due to the gas-liquid exchanging operation, and leakage of ink from the atmosphere communicating port 112 or liquid supply port 114 when the seal is broken.

As described above, the characteristic feature of Invention 1 that constitutes the core of the technical idea which cannot be found in conventional ink tanks resides in the fact that it forms a barrier on the interface between the negative pressure generating members to block the movement of air by adopting the following constructions to solve the problem of ink leakage when the seal is broken, which was found in prior art, while achieving the same working effect as that of conventional ink tanks to increase the ink containing amount per unit volume of the ink tank and achieve a stable ink supply: (i) a construction where two negative pressure generating members are contained in a negative pressure generating member containing chamber and urged against each other to have the interface thereof have a higher capillary force than those of the negative pressure generating members (while this construction is achieved by Constituent Features A, and E through H, the most technically significant construction

is found to be that prescribed in Constituent Feature H, where the interface of the urged portions has the highest capillary force); and (ii) a construction where a predetermined amount of ink, i.e. an amount of liquid which can be held by the entire interface of the urged portions irrespective of the posture of the liquid container, is injected (Constituent Feature K).

In this regard, as mentioned in (2)b.(e) above, the following statement is found in the Description (Exhibit Ko No. 2): "In the case of other postures, the difference between the water head of the ink-atmosphere interface L and the water head of the ink contained in the interface 132C between the negative pressure generating members becomes still smaller than the difference between the capillary forces P_2 and P_s and therefore, the interface 132C can keep a state in which it has ink in the whole area thereof, irrespective of its posture. Therefore, in any posture, the interface 132C cooperates with (note of the judgment: the kanji character for "cooperate with" is found to be an error) the partition wall and the ink contained in the negative pressure generating member containing chamber to function as a gas introduction blocking means for blocking the introduction of gas from the communicating portion 140 and the atmosphere introduction path 150 into the liquid containing chamber and thus, it never happens that the ink overflows from the negative pressure generating members. (paragraph [0048])"

Ink tanks which fulfill the construction mentioned in (i) above but not that mentioned in (ii) above (ink tank filled with an amount of ink less than the amount prescribed in Constituent Feature K) can also be used for printing by an ink jet printer and sufficiently function as ink tanks. However, inside such ink tanks, a barrier to block the movement of air is not formed at all times in the interface between the negative pressure generating members, and the amount of ink injected would be small. Thus, they would obviously be inefficient when used for printing a large volume of documents and inferior to conventional ink tanks in terms of the working effect. Accordingly, the object of Invention 1 would be achieved only if both the constructions described in (i) and (ii) above are provided, and thus both the Constituent Features H and K should be deemed to be an essential portion of Invention 1.

(c) As mentioned in (2)c. above, ink tanks containing several negative pressure generating members also existed in the past. Nevertheless, the interior of the liquid container of such ink tanks was not separated into multiple chambers and such ink tanks were exclusively aimed at ensuring stable ink supply to printers. Moreover, no such ink tanks indicated a technical idea where several negative pressure generating members are urged against each other to have the interface between them have the

highest capillary force and have such interface absorb ink, thereby forming a barrier to block the movement of air. Furthermore, in the case of a liquid container whose interior is not separated, the ink contained in the liquid containing chamber would not flow into the negative pressure generating member containing chamber, and thus any problem to prevent such flow, which would serve as a prerequisite to conceive of such technical idea, did not exist. Accordingly, the existence of prior art would not obstruct the essential element of Invention 1 from being understood as above.

b. Refilling with ink the Ink Tank Cartridges whose ink has been used up

The process used by Company C to manufacture the appellee's products by using the appellant's products whose ink has been used up involves the following steps as mentioned in (2)e.(a) above: (i) a step of opening a hole on the upper surface of the liquid containing chamber of the Ink Tank Cartridge; (ii) a step of cleaning inside the Ink Tank Cartridge; and (iii) a step of injecting ink to a point above the interface of the urged portions between the negative pressure generating members contained in the negative pressure generating member containing chamber and into the entire liquid containing chamber.

As a result of examining this process, when the users of the appellant's products use the ink tank of Invention 1, the amount of ink contained in the liquid containing chamber and the negative pressure generating member containing chamber decreases and thereby the Constituent Feature K is no longer fulfilled. Thus, it is obvious that the Ink Tank Cartridges whose ink has been used up fail to fulfill Constituent Feature K.

Moreover, as mentioned in (2)d.(b) above, when a week to 10 days passes after the Ink Tank Cartridges whose ink has been used up are removed from the printer (in this case, as mentioned in 2.(5)b of No. 2 above, taking into account that the Ink Tank Cartridges were collected by Company B in North America, Europe and Asia including Japan, it is obvious that the abovementioned period of time would have passed by the time the Ink Tank Cartridges were provided for manufacture by Company C into the appellee's products after being removed from the printer), the ink remaining on the wall surface of the liquid containing chamber, the first and second negative pressure generating members, interface of the urged portions between the two negative pressure generating members, as well as the ink supply port inside the ink tank dries and hardens. Especially, as the interface of the urged portions has a higher capillary force than the first and second negative pressure generating members, liquid ink would normally remain adhered to the fibrous materials of the interface as of the time when the ink tank is removed from the printer. Moreover, after the abovementioned period of time has passed, it is found that ink adhered to the numerous microscopic pores inside

the fibrous materials of the interface dries and hardens in an uneven manner and forms air bubbles and air layers inside the pores and thereby impedes the absorption and holding of new ink. Due to this phenomenon, the following function to be performed by the interface of the urged portions in Invention 1 cannot be achieved: in whatever direction the ink tank may be left in, the difference between the capillary force of the second negative generating member and the capillary force of the interface of the urged portions is equal to or greater than the difference between the water head of the ink-atmosphere interface in the second negative pressure generating member and the water head of the ink-atmosphere interface of the interface of the urged portions, which is, in other words, irrespective of the posture of the ink tank, the interface of the urged portions is always filled with ink and therefore, a barrier is formed to block the movement of air on the interface of the urged portions, and air is prevented from flowing into the first negative pressure generating member and liquid containing chamber through the interface of the urged portions (paragraphs [0019] and [0020] in the Description). In this regard, taking into consideration the abovementioned statements in the Description, it is appropriate to construe that the phrase, "the capillary force of the interface of the urged portions is higher than the capillary forces of the first and second negative pressure generating members" as prescribed in Constituent Feature H of Invention 1 not only refers to the situation where the capillary force of the interface of the urged portions is higher than the capillary forces of the first and second negative pressure generating members but also to the situation where the difference in the capillary force has reached a level sufficient enough to achieve the abovementioned function. Then, in regard to the Ink Tank Cartridges which have passed the abovementioned period of time after they have been removed from the printer, and in which it is found that the ink adhered to the numerous microscopic pores inside the fibrous materials of the interface of the urged positions has dried and hardened in an uneven manner and that air bubbles and air layers are generated inside the pore, and thereby the absorption and holding of new ink is prevented, it should be regarded that Constituent Feature H is not fulfilled.

Accordingly, when the act of cleaning inside the Ink Tank Cartridges by washing away the hardened ink and refilling them with ink in a predetermined amount to fulfill Constituent Feature K is examined in light of the distinctive portion that constitutes the core of the technical idea underlying the specific means of the patented invention to solve the problem, based on a patented invention, such act is an act to recover the function of the interface of the urged portions, which is one of the components that constitutes the essential portion of Invention 1 in regard to the appellant's products,

and an act of having the Ink Tank Cartridges provided again with the abovementioned amount of ink. Furthermore, such act, which is an indispensable act to achieve the object of Invention 1 (prevention of ink leakage when the seal is broken), i.e. to form a barrier to block the movement of air by fulfilling again the Constituent Features H and K, is nothing but a modification or replacement of part of the components that constitute an essential portion of the patented invention involved in the patented product.

c. Summary

Based on the abovementioned findings, the appellee's products have been manufactured by Company C by modifying or replacing a component stated in the scope of claims of Invention 1 involved in the appellant's products. Moreover, as this component is part of the components that constitute an essential portion of Invention 1, in this case, Type 2 Condition is met and the patent is not exhausted. Therefore, the appellant should be allowed to exercise the Patent for Invention 1 against the appellee's products.

(5) Regarding the allegations made by the appellee in this court

The appellee, as the grounds for construing that the appellant should not be allowed to exercise the Patent, alleges the following two points: (i) from the perspective of conservation of environment, the import and sale of the appellee's products, which are recycled products, should not be prohibited; and (ii) the appellant's business model is unfair. Even if these allegations have been made to mention the abuse of right, they are all unacceptable for the following reasons.

a. Regarding the perspective of conservation of the environment

(a) As held in (3)c. above, conservation of the environment is essential to secure the health and cultural life of both the present and future generations of the nation, as well as the wellbeing of all humankind, and the establishment of a sound material-cycle society should be promoted as a responsibility of the state, local governments, business operators and citizens. Therefore, the fundamental philosophy of conservation of the environment must also be respected to the greatest possible extent in construing the provisions of the Patent Act. For example, the protection of inventions such as an invention of a process to reuse products, etc. or an invention of materials easy to reclaim under the Patent Act is clearly consistent with the philosophy of conservation of the environment. On the other hand, the Patent Act has been provided based on the idea that a person who has made an invention and disclosed it would be granted a patent and an exclusive right to work such invention. Thus, when a patent has been granted to an invention as prescribed above, a third party would not be able to reuse the product

covered by a patented invention or manufacture or sell the materials easy to reclaim unless he/she is licensed by the patentee. In this sense, the Patent Act does involve some aspects contrary to the philosophy of conservation of the environment (if, however, the philosophy of the conservation of the environment is given priority at all times, and it is construed that a third party can freely work the relevant invention in the abovementioned case, though the reuse of the products, etc. may be promoted in the short term, the motivation for and investments in new technology development could be hindered in the long run). Then, even where a result contrary to the philosophy of conservation of the environment could occur by allowing the exercise of a patent, it should be construed that this does not immediately serve as the grounds for denying the exercise of the patent for constituting an abuse of right.

(b) The appellee's products have been manufactured by reusing the ink tanks of the used appellant's products without disposing of them. Taking into consideration this aspect alone, the appellee's act, which reduces wastes, etc. (see (3)c. above), is consistent with the philosophy of the conservation of the environment, and thus allowing the exercise of Patent against such act may go against such philosophy.

Nevertheless, as held in (3)c. above, a cyclical use of circulative resources to be conducted in a sound material-cycle society is not limited to the reuse or reclamation but also include heat recovery. Thus, not only the act of reusing the used appellant's products as ink tanks but also the act of using such used appellant's products as a heat source agrees with the philosophy of conservation of the environment, though the environmental load caused thereby may vary. In this case, the appellant calls on the users of the appellant's products for cooperation in colleting the used appellant's products and actually collects a significant quantity of used products (according to a questionnaire survey conducted to the users of ink jet printers, about half of the respondents returned the used ink tanks into the collection box installed by the manufacturers). The appellant further sorts them out and reuses them as supplementary fuel to substitute part of the main fuel, coal, as an energy source for manufacturing cement, and the cinders are used after being mixed with the raw materials for cement, as found in (2)d.(c) and (2)f.(c) above. Then, based on the facts in this case, it cannot be deemed that only the appellee's act is consistent with the philosophy of conservation of the environment, and that the appellant's act of seeking injunctive relief against the import and sale of the appellee's products, which are recycled products, is contrary to the philosophy of the conservation of the environment.

(c) The appellee also alleges that if the appellant is allowed to exercise his/her patent, the market for recycled products would be eradicated, and thus such allowance

is inappropriate from the perspective of international business and protection of the consumers.

However, even if it is concluded that the appellant should be allowed to exercise his/her patent in this case, this conclusion is based on nothing but the fact that a third party has made modification or replacement to part of the components that constitute an essential portion of the patented invention involved in the patented product, as described above, and does not mean that the manufacture and sale of recycled products must be prohibited in any case. If the genuine products have not been manufactured by working a patented invention, there is indeed no room for any person to be accused of infringement of patent by the manufacture and sale of recycled products, and the same could be said in the case where the patent is exhausted. Therefore, the abovementioned appellee's allegation which has failed to correctly interpret this case, is unreasonable.

b. Regarding the appellant's business model

The appellee, criticizing the appellant's business model (i.e. selling the printer at a low price and driving the printer users to buy genuine ink tanks at a high price, thereby making unfair profits), argues that the appellant's exercise of the Patent, which would harm the consumer and afford excessive protection of the patentee, should not be allowed.

However, there is no evidence that shows the appellant's business model is as argued by the appellee. What was submitted by the appellee was only newspaper articles reporting that the appellant secures profits by having the customers purchase many a time consumable components such as ink tanks, and about 60% of its business profits is gained from the sales of consumable components (Exhibits Otsu No. 42 and No. 55-2), and a written statement made by a manufacturer of recycled products to the effect that it is a common knowledge in the industry that the manufacturing cost for genuine ink tanks are around 50 yen (Exhibit Otsu No. 56-1), and no evidence is found to objectively prove that the price of the printers sold by the appellant is unreasonably cheap and that the genuine ink tanks are unreasonably expensive.

In addition, as compensation for the disclosure of an industrially applicable invention to the public, the patentee is given the exclusive right to work the patented invention for making profit, and the patentee has discretion to set the prices of the patented products and other related products unless there are special circumstances where such pricing is against the public interest or public order under the Antimonopoly Act, etc. And in this case, no such evidence suggesting such special circumstances is found.

If it is assumed, as argued by the appellee, that the appellant sets the price of the

genuine products at a level significantly higher than the manufacturing cost and gains excessive profits from the sale of the genuine products, it follows that the appellee also gains excessive profits considering such factors as the price gap between the genuine products and the recycled products (the retail price per unit is 800 to 1,000 yen for the genuine products and 600 to 700 yen for the recycled products, as found in (2)e.(b) above) and costs incurred by the appellant and appellee respectively (the appellee incurs expenses for manufacturing and transporting the recycled products but has avoided research and development costs for the patented invention and manufacturing costs for the Ink Tank Cartridges). Therefore, it is unreasonable for the appellee to argue that the appellant's exercise of the Patent should not be allowed for the benefit of consumers.

(6) Conclusion

As held above, with the ink initially injected being used up, the appellee's products cannot be found to have met Type 1 Condition, i.e. the patented product is reused or reclaimed after it has finished its service along with the lapse of its ordinary life as a product. Yet, based on the fact that Company C manufactured the appellee's products by a process to fulfill again the Constituent Features H and K, Type 2 Condition is met, i.e. a third party has made modification or replacement to the whole or part of the components that constitute an essential portion of the patented invention involved in the patented product, and thus the Patent for Invention 1 has not been exhausted.

Therefore, the appellant is allowed to exercise the Patent for Invention 1 to seek injunctive relief in order to prevent the appellee from importing and selling the appellee's products derived from the appellant's products for domestic sale, and force it to dispose of the appellee's products.

2. Whether or not the appellant should be allowed to exercise the Patent for Invention 10, i.e. a process invention for producing a product, against the appellee's products that are manufactured by refilling with ink the appellant's products for domestic sale

(1) Introduction

The appellant alleges that Company C's act of manufacturing the appellee's products by using the used appellant's products for domestic sale is an act of working Invention 10, and thus the appellee's act of importing and selling the appellee's products manufactured by such act constitutes infringement of the Patent for Invention 10.

As held in 1. above, the appellant is allowed to exercise the Patent for Invention 1 to seek injunctive relief to prevent the appellee from importing and selling the appellee's products derived from the appellant's products for domestic sale. Thus, basically, it is unnecessary to determine whether or not the appellant is allowed to

exercise the Patent for Invention 10 against the appellee's products derived from the appellant's products for domestic sale. Yet, taking into account the significance of this case, this court will determine on this regard as well (the appellee has auxiliary alleged an implied license, together with the allegation of the exhaustion of the patent, and this court will collectively take these perspectives into consideration and determine whether or not the appellant should be allowed to exercise the Patent for Invention 10).

(2) Exhaustion of a patent for a process invention for producing a product

a. Working of a process invention for producing a product

The Patent Act provides that the working of a process invention for producing a product shall be made in the following two ways: use of the process itself (Article 2, paragraph (3), item (ii) of the Patent Act), and use or assignment, etc. of the products produced using the claimed process (hereinafter the products produced by the process claimed in a process invention for producing a product shall be referred to as the "resulting products") (item (iii) of said paragraph). While the former prescribes an embodiment for process inventions in general, the latter prescribes an embodiment peculiar to inventions of processes for producing a product.

The issue of exhaustion of a patent in relation to a process invention for producing a product should be discussed separately for each type of embodiment mentioned above.

b. Regarding the use and assignment, etc. of resulting products

Where a product produced by a process covered by a process invention for producing a product (resulting product) is assigned in Japan by the patentee or a licensee licensed by the patentee, the patent for such resulting product, having fulfilled its purpose, has been exhausted, and the patentee is no longer allowed to exercise his/her patent to seek injunctive relief against such act as using, assigning or leasing the patented product. This is because the following reasons given in the court precedent (Supreme Court Judgment on the BBS Case) as the substantial grounds for a patent for a product invention to be exhausted can also be applied to this case: (i) free distribution of goods in the market should be guaranteed; and (ii) it is unnecessary to give the patentee an opportunity to gain double profits.

Thus, it is appropriate to construe that the patent is not exhausted and the patentee is allowed to exercise the patent in relation to the resulting products where either of the following conditions is met: (i) the relevant resulting product is reused or reclaimed after it has finished its service along with the lapse of its ordinary life as a product (Type 1 Condition); or (ii) where said resulting product contains the components that constitute an essential portion of the patented invention as a constitution of the product, a third party has made modification or replacement to the whole or part of said

components (Type 2 Condition). In this regard, the holdings made in regard to the exhaustion of a patent for a product invention in 1.(1) above shall be applicable as they stand.

c. Regarding the use of a process

Regarding the act of working a process invention for producing a product as provided for in Article 2, paragraph (3), item (ii) of the Patent Act, i.e. an act of using a process claimed in a patented invention, because it cannot be presumed that a patentee would assign such process invention as an act of working the invention and the products covered by such process invention would be distributed in the market, the exhaustion doctrine for a patent for a product invention does not apply as it is. Nevertheless, the patentee should not be allowed to exercise the patent where either of the following conditions is met.

(a) Where a product produced by a patented process is also patented as a product invention, with no difference in technical ideas between the process invention and the product invention, i.e. the technical contents of both inventions are substantially the same, and the same invention has been stated in the scope of claims and the description simply as a product invention as well as a process invention for producing a product, if the patent for the product invention has been exhausted, it is appropriate to construe that the patentee should not be allowed to exercise the patent for the process invention, either. Accordingly, where a product manufactured by working a patented product invention is used as a material in producing a patented product by working a process invention for producing a product, and the patent for the product invention has been exhausted, the patentee should not be allowed to exercise the patent for a process invention for producing a product.

(b) Moreover, where the patentee or patent licensee has assigned articles that are to be used exclusively for the patented process (Article 101, item (iii) of the Patent Act) or used for the patented process (excluding those widely distributed within Japan) and that are indispensable for solving the problem through the patented invention (item (iv) of said Article), it is appropriate to construe that the patentee is not allowed to exercise the patent right to seek injunctive relief against the direct assignee or any subsequent assignee for their act of using the patented process using the assigned articles, or using or assigning products produced by the patented process using the assigned articles. This is based on the following two reasons: (i) in the

abovementioned case, the assignee as well as the subsequent assignee would accept from the patentee the assignment of these articles, i.e. the manufacturing equipment to be used exclusively for the production of a product by a patented process and raw materials indispensable for producing the product, on the prerequisite that the assignee or subsequent assignee would be allowed to use the process covered by the patented invention by using such articles. Thus, if the patentee's license would be required to use such process by using those articles, the free distribution of goods in the market would be impaired; and (ii) since the patentee virtually has an exclusive right to assign these articles (see Article 101 of the Patent Act), he/she is able to decide on the assignment price of such articles as well as the consideration for the future use of the patented process by any assignee or subsequent assignee, and is thereby guaranteed the opportunity to receive compensation for disclosing a patented invention (in the abovementioned case, the patentee has not assigned the product manufactured by working the patented invention, and regardless of his/her intention, the patentee should not be allowed to exercise his/her patent; yet, in cases including the abovementioned case, whether or not to use the term "exhaustion" of a patent or "an implied license" is nothing but an issue of expression).

Accordingly, in the case of a process invention for producing a product, where the patentee or patent licensee has assigned manufacturing equipment exclusively to be used for the production of a product by the patented process or has assigned raw materials indispensable to produce products by such process, the patentee is not allowed to exercise the patent to seek injunctive relief against the act of the assignee or subsequent assignee of producing products by using the manufacturing equipment or raw materials so assigned as well as using the patented process, nor is the patentee allowed to exercise the patent against the products produced by using such manufacturing equipment or raw materials.

(3) Determination on this case

Based on the abovementioned standpoint, this court will examine whether or not the appellant should be allowed to exercise the Patent for Invention 10, which is a process invention for producing a product, against the appellee's products derived from the appellant's products for domestic sale, in this case.

a. Regarding Invention 10

According to the statements in the “Basic facts” above (see section 2 of No. 2) and the evidence listed below, the following facts are found.

(a) Scope of claims of Invention 10

The statements of the scope of claims for Invention 10 as well as the details of the Constituent Features are as stated in the “Basic facts” mentioned above (see section 2.(3) of No. 2)

(b) Statements in the Description (Exhibit Ko No. 2)

In addition to the statements described with regard to Invention 1 (1.(2)b.), the following statements are found in regard to Invention 10 in the part “Detailed explanation of the invention” included in the Description.

i. Problems to be solved by the invention (paragraph [0014])

In addition, it is another object of the present invention to provide a method of manufacturing the liquid container described above, and ink jet cartridge utilizing said liquid container, etc.

ii. Means to solve the problem (paragraphs [0022] and [0025])

Also, the present invention provides a method of manufacturing the liquid container described above, a package as a form of the container during the distribution thereof, an ink jet head cartridge in which the container and a recording head are made integral with each other, and a recording apparatus.

A method of manufacturing a liquid container (note of the judgment: process of Invention 10) according to another embodiment of the present invention is characterized by the following steps: (i) the step of preparing a liquid container having a negative pressure generating member containing chamber containing therein first and second negative pressure generating members urged against each other and provided with a liquid supplying portion and an atmosphere communicating portion, a liquid containing chamber provided with a communicating portion communicating with the negative pressure generating member containing chamber and forming a substantially hermetically sealed space and storing therein liquid to be supplied to the negative pressure generating members, and a partition wall for partitioning the negative pressure generating member containing chamber and the liquid containing chamber and forming the communicating portion, wherein the interface of the urged portions of the first and second negative pressure generating members intersects with the partition wall, the first negative pressure generating member communicates with the communicating portion and can communicate with the atmosphere communicating portion only through the interface of the urged portions, and the capillary force of the interface of the urged portions is higher than the capillary forces of the first and second

negative pressure generating members; (ii) the first liquid injection step of filling the liquid containing chamber with liquid; and (iii) the second liquid injection step of filling the liquid containing chamber with an amount of liquid which can be held by the entire interface of the urged portions irrespective of the posture of the liquid container.

b. Next, the court will determine whether or not the appellant should be allowed to exercise the Patent for Invention 10 in this case.

(a) As it is obvious from the comparison made in regard to the scope of claims between Invention 10 and Invention 1, Invention 10 is a process invention to produce a liquid container characterized by the step of preparing a liquid container fulfilling Constituent Features A through H of Invention 1 (a liquid container which is not filled with liquid) (Constituent Features A' through C' and E' through I' of Invention 10), and a step of filling such liquid container with liquid to fulfill Constituent Features K and L of Invention 1 (Constituent Features J' and K' of Invention 10) (Constituent Feature L' of Invention 10). Regarding the liquid injection step, although it has been defined that the negative pressure generating member containing chamber should be filled with liquid at an amount which can be held by the entire interface of the urged portions, irrespective of the posture of the liquid container (Constituent Feature K'), no specific statement has been made in the scope of claims with regard to the method of injection, and according to the statements in the "Detailed explanation of the invention" included in the Description, a publicly known method can be used (see 1.(2)b.(f) above and paragraph [0105] in the Description)

(b) First, this court will examine the use and assignment of the resulting products (as mentioned in (2)b. above).

Both parties admit that the appellant's products were manufactured by the appellant by a process that falls within the technical scope of Invention 10 and were sold by the appellant or any person licensed by the appellant. Moreover, the appellee's products were manufactured by Company C by refilling with ink the Ink Tank Cartridges of the abovementioned appellant's products whose ink has been used up, as found in 1.(2)e. above. Therefore, as mentioned in (2)b. above, it should be determined whether or not the appellant should be allowed to exercise the Patent for Invention 10 against the appellee's act of assigning the appellee's products as resulting products of Invention 10, in the same manner used in deciding whether or not the Patent for Invention 1, which is a product invention, has been exhausted.

Then, for the same reasons given in the holdings mentioned in 1. above, the resulting products of Invention 10 cannot be deemed to have finished their service along with the lapse of their original life as a product (i.e. Type 1 Condition is not met) with

the fact that the ink initially injected therein has been used up. Yet, the following two steps constitute part of the process that constitutes an essential portion of the invention and the effects of such steps exist in the form of components of the appellant's products, which are the resulting products of Invention 10 (components that fulfill Constituent Features H and K of Invention 1): (i) the step of preparing a liquid container having a negative pressure generating member containing chamber containing therein two negative pressure generating members, wherein the interface of the urged portions of the two negative pressure generating members has a capillary force higher than those of the two negative pressure generating members (Constituent Feature H'); and (ii) a step of filling liquid at an amount which can be held by the entire interface of the urged portions irrespective of the posture of the liquid container (Constituent Feature K'). Accordingly, Company C's act of manufacturing the appellee's products by the abovementioned process satisfies Type 2 Condition, i.e. the case where modification or replacement to the relevant component has been made, and thus the appellant should be allowed to exercise the Patent for Invention 10 to seek injunctive relief.

(c) Next, this court will examine the use of the process (as mentioned in (2)c. above).

Both parties admit that Company C's process of manufacturing the appellee's products falls within the technical scope of Invention 10. Moreover, according to (a) above, Invention 10 is a process invention to produce a liquid container described in Invention 1, where the liquid container, which is naturally assumed to be filled with ink and be used, is to be filled with liquid by a publicly known method. Thus, Invention 10, where no new technical idea has been added to Invention 1, does not involve any technical idea different from Invention 1. Then, when the Patent for Invention 1 has been exhausted, the appellant should not be allowed to exercise the Patent for Invention 10, either. However, so long as the Patent for Invention 1 has not been exhausted, for the same reasons stated above, the appellant should be allowed to exercise the Patent for Invention 10 against the appellee's products, which are resulting products manufactured by Company C using the process that falls within the technical scope of Invention 10.

As mentioned above, the appellee's products are manufactured by Company C by refilling with ink the appellant's products whose ink has been used up. Then, Company C's act of manufacturing the appellee's products by using the process covered by Invention 10 can be deemed to be the case where the Ink Tank Cartridges sold by the appellant or a party licensed by the appellant are used as the manufacturing equipment or raw materials. However, as mentioned in section 2.(4) of No. 2 above, the appellant's products are sold in the state being filled with ink as those falling within the technical

scope of Invention 1, but not as manufacturing equipment or raw materials to manufacture ink tanks. In addition, as described above, Invention 10 is a process invention to produce a liquid container described in Invention 1, and does not involve any technical idea different from that of Invention 1. Thus, the part, "the second liquid injection step of filling the negative pressure generating member containing chamber with an amount of liquid which can be held by the entire interface of the urged portions irrespective of the posture of the liquid container" (Constituent Feature K'), in Invention 10 constitutes an essential portion of Invention 10. Therefore, Company C's act of filling the appellant's products whose ink has been used up (Ink Tank Cartridges) with ink at the abovementioned predetermined amount, is not only an act of refilling with ink the Ink Tank Cartridges sold by the appellants, etc., but also an act of newly working the process that constitutes an essential portion of Invention 10. Taking this point into consideration, in this case, it cannot be said that the appellant or a person licensed by the appellant has sold any manufacturing equipment or raw materials to manufacture ink tanks by using the process covered by Invention 10, and therefore the appellant should be allowed to exercise the Patent for Invention 10.

c. Conclusion

Based on the abovementioned findings, the appellant is allowed to exercise the Patent for Invention 10 to seek injunctive relief to prevent the appellee from importing and selling the appellee's products derived from the appellant's products for domestic sale and force it to dispose of them.

3. Whether or not the appellant should be allowed to exercise the Patent against the appellee's products manufactured by refilling with ink the appellant's products for overseas sale

(1) Regarding a patent for a product invention

a. Whether or not a patentee should be allowed to exercise his/her patent right

If the holder of a Japanese patent or a party equivalent thereto assigns the patented product outside Japan, the patentee is not allowed to exercise his/her patent right against the direct assignee except in cases where he/she has agreed with the direct assignee that Japan be excluded from the areas of sale or use with regard to the product, or against a third party who has received the patented product from the direct assignee and any subsequent assignee except in cases where the patentee has made the same agreement with the direct assignee and clearly indicated this on the patented product, by reason of the act of importing the product into Japan or using or assigning it in Japan (Supreme Court Judgment on the BBS Case). In this case, the appellant has not made any agreements with the assignees to exclude Japan from the areas of sale or use

with regard to the appellant's products sold overseas nor has any clear statement to that effect been indicated on the appellant's products, as found in 2.(4)b. of No. 2 above. Therefore, the act of importing the appellant's products sold overseas but yet to be used, or using or assigning them in Japan, shall not be subject to the exercise of the Patent.

However, it is appropriate to construe that a patentee should be allowed to exercise his/her rights based on the patent for the patented product, where either of the following conditions is met: (a) the patented product is reused or reclaimed after it has finished its service along with the lapse of its ordinary life as a product (Type 1 Condition); or (b) a third party has made modification or replacement to the whole or part of the components that constitute an essential portion of the patented invention involved in the patented product (Type 2 Condition). While it may be naturally presumed that in international economic transactions, transactions in the market would also be made on the prerequisite that the assignee would acquire the right to freely use or reassign the object in the course of trade, and that the assignee or subsequent assignee who acquired the patented product through an international transaction would import it to Japan, or use it or reassign it to other parties in Japan in the course of trade, the abovementioned construction is based on the following two reasons: (i) the abovementioned act of using or reassigning is to be conducted on the premise that the patented product retains its working effect, and it is not assumed that the assignee or subsequent assignee would use or reassign the relevant product in Japan after the working effect of such product has been lost due to the wear of components or deterioration of ingredients with the lapse of time; and (ii) it is not assumed that the assignee or subsequent assignee would use or reassign the patented product in Japan after a third party has made any modification or replacement to the whole or part of the components that constitute an essential portion of the patented invention involved in the patented product. Accordingly, even if a patentee assigns the patented product outside of Japan without lodging any reservation, it cannot be construed that the patentee has also implicitly granted to the assignee or subsequent assignee the right to control the product in Japan free of any restriction under a patent held by the patentee, in the cases of (a) and (b) above.

b. Examination on this case

For the same reasons given in the holdings made in respect of the appellee's products derived from the appellant's products for domestic sale (see 1. above), it cannot be deemed, also in respect of the appellee's products derived from the appellant's products for overseas sale, that a patented product has been reused or reclaimed after it has finished its service along with the lapse of its original life as a product with the fact

that the ink initially injected therein has been used up (i.e. Type 1 Condition is not met). Yet, Company C's act of manufacturing the appellee's products by the steps of fulfilling Constituent Features H and K can be deemed to fall under the case where a third party has made modification or replacement to whole or part of the components that constitute an essential portion of the patented invention involved in the patented product (i.e. Type 2 Condition is met).

Therefore, the appellant is allowed to exercise the Patent for Invention 1 to seek injunctive relief to prevent the appellee from importing and selling the appellee's products derived from the appellant's products for overseas sale and force it to dispose of them.

(2) Regarding the patent for a process invention for producing a product

a. The appellant alleges that Company C's act of manufacturing the appellee's products by using the used appellant's products for overseas sale is an act of working Invention 10, and thus the appellee's act of importing into and selling in Japan the appellee's products manufactured by the first-mentioned act constitutes infringement of the Patent for Invention 10.

As held in (1) above, the appellant is allowed to exercise the Patent for Invention 1 to seek injunctive relief against the act of importing and selling the appellee's products derived from the appellant's products for overseas sale as well as the disposal of such appellee's products. Therefore, basically, it is unnecessary to determine whether or not the appellant should be allowed to exercise the Patent for Invention 10 against the appellee's products derived from the appellant's products for overseas sale. Yet, taking into account the significance of this case, this court will determine on this regard as well.

b. This court will first examine the act of using and assigning (Article 2, paragraph (3), item (iii) of the Patent Act) the products produced by the relevant process (hereinafter such products shall be referred to as the "resulting products") among the embodiments of a process invention for producing a product.

Where the holder of a Japanese patent or a party equivalent thereto assigns outside Japan a product produced by a process covered by a process invention (resulting product), the patentee is not allowed to exercise his/her patent right against the direct assignee except in cases where he/she has agreed with the direct assignee that Japan be excluded from the areas of sale or use with regard to the resulting product, or against a third party who has received the patented product from the direct assignee and any subsequent assignee except in cases where the patentee has made the same agreement with the direct assignee and clearly indicated this on the resulting product, by reason of

the act of importing the product into Japan or using or assigning it in Japan. This is because the reasons given in the court precedent on the patent for a product invention (Supreme Court Judgment on the BBS Case) are also applicable, i.e. the free distribution of goods in international transactions should be respected. In this case, the appellant has not made any agreements with the assignees to exclude Japan from the areas of sale or use with regard to the appellant's products sold overseas nor has any explicit statement to that effect been indicated on the appellant's products, as found in (1)a. above.

However, it is appropriate to construe that a patentee should be allowed to exercise his/her rights based on the patent for the resulting product, where either of the following conditions is met: (a) the resulting product is reused or reclaimed after it has finished its service along with the lapse of its ordinary life as a product (Type 1 Condition); or (ii) a third party has made modification or replacement to the whole or part of the components that constitute an essential portion of the patented invention involved in the resulting product (Type 2 Condition). In this regard, the same reasons given in respect of a patent for a product invention (see (1)a. above) are also applicable.

Therefore, in this case, for the same reason given in (1)b. above regarding a patent for a product invention, the appellant's products, which are the resulting products of Invention 10, have not finished their service along with the lapse of their original lives with the ink initially injected therein being used up (i.e. Type 1 Condition is not met). Yet, Constituent Features H' and K' of Invention 10 constitute part of the process that constitutes an essential portion of the invention, and the effects thereof exist in the form of components of the appellant's products, which are the resulting products of Invention 10 (components that fulfill Constituent Features H and K of Invention 1). Accordingly, as Company C's act of manufacturing the appellee's products by the abovementioned process can be deemed to fall under the case where modification or replacement to the relevant component has been made (i.e. Type 2 Condition is met), the appellant should be allowed to exercise the Patent for Invention 10 to seek injunctive relief to prevent the appellee from importing and selling the appellee's products derived from the appellant's products for overseas sale and to force it to dispose of them.

c. Next, this court will examine the act of using a process covered by a patented invention (Article 2, paragraph (3), item (ii) of the Patent Act), among the embodiments of a process invention for producing a product.

Where a product produced by a process covered by a process invention for producing a product is also covered by a product invention and the process invention

does not involve a technical idea different from that of the product invention, if a patentee or a party equivalent thereto is not allowed to exercise his/her patent right for a product invention against the patented product he/she has assigned overseas, it is appropriate to construe that such patentee or party equivalent thereto would not be allowed to exercise his/her patent right for a process invention for producing a product, either. As Invention 10 is a process invention to produce a liquid container described in Invention 1 wherein a liquid container, which is naturally presumed to be filled with ink and used, would be filled with liquid by a publicly known method, Invention 10, where no new technical idea has been added to Invention 1, does not involve any technical idea different from that of Invention 1. Then, since the patentee is allowed to exercise the Patent for Invention 1, he/she should also be allowed to exercise the Patent for Invention 10.

On the other hand, where the patentee or patent licensee has assigned in Japan articles that are to be used exclusively for the patented process (Article 101, item (iii) of the Patent Act) or used for the patented process (excluding those generally available in Japan) and that are indispensable for solving the problem through the patented invention (item (iv) of said Article), the patentee should not be allowed to exercise his/her rights based on the patent against the act of the direct assignee or any subsequent assignee of using the patented process using the assigned articles, or using or assigning products produced by the patented process using the assigned articles (see 2.(2)c.(b) above). However, where a patentee or a party equivalent thereto has assigned such articles outside Japan, whether or not a patentee should be allowed to exercise his/her rights based on the patent against the assignee or subsequent assignee's act of importing and using the patented process by using such articles in Japan or importing into Japan and using or assigning in Japan the products produced by the patented process using such articles overseas involves situations different from those in the court precedent (Supreme Court Judgment on BBS Case). Specifically, in these kind of cases, the determination on whether or not it can be construed that the patentee has implicitly licensed the assignee or subsequent assignee that acquired such articles through international transactions to use the patented process by using such articles in Japan or to use or assign in Japan the products produced by using such articles is an issue that requires further consideration. Nevertheless, in this case, as found in 2.(3)b.(c) above, the appellant or a party licensed by the appellant has not sold any manufacturing equipment or raw materials to manufacture ink tanks by using the process covered by Invention 10, and thus there is no prerequisite for the abovementioned issue to be considered. Accordingly, regardless of the conclusion for such issue, the appellant should

be allowed to exercise the Patent for Invention 10 to seek injunctive relief to prevent the appellee from importing and selling the appellee's products derived from the appellant's products for overseas sale and force it to dispose of them.

4. Conclusion

Based on the abovementioned findings, all of the appellant's claims are well-grounded, and thus the judgment in prior instance which dismissed such claims shall be revoked. Accordingly, all of the appellant's claims shall be upheld and the judgment shall be rendered in the form of the main text. In addition, as it is inappropriate to make a declaration of provisional execution in this case, the judgment shall be rendered without a declaration of provisional execution.

Intellectual Property High Court, Special Division

Presiding judge: SHINOHARA Katsumi

Judge: TSUKAHARA Tomokatsu

Judge: NAKANO Tetsuhiro

Judge: MIMURA Ryoichi

Judge: HASEGAWA Koji

(Attachments are not available)