Trial decision

Invalidation No. 2015-800216

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The case of trial regarding the invalidation of Japanese Patent No. 4700052, entitled "Inspection machine and process," between the parties above has resulted in the following trial decision.

Conclusion

The patent for the invention according to Claim of Patent No. 4700052 shall be invalidated.

The costs in connection with the trial shall be borne by the demandee.

Reasons

No. 1 History of the procedures

The application (No.2007-509002) regarding Patent No. 4700052 (hereinafter referred to as "the Patent") was filed on April 15, 2005 (priority claim under the Paris Convention: April 22, 2004, European Patent Office (EP)) as an International Patent Application. The establishment of the patent right was registered on March 11, 2011.

A trial for invalidation (Invalidation No. 2011-800218) was demanded on October 27, 2011, and a correction request was made on February 9, 2012. The trial decision that "The correction shall be approved. The patent regarding the invention according to Claims 1, 3 to 18 shall be invalidated. The demand for trial regarding the invention according to Claim 2 is groundless" was given on January 10, 2014, and the above decision has become final and binding.

The trial for invalidation of the case was demanded by the demandant (KOMORI Corporation) on November 26, 2015. The written reply for the trial case as

of April 11, 2016 was submitted by the demandee (KBA-NOTASYS Société anonyme). An oral proceedings statement brief as of June 28, 2016 was submitted by the demandant. An oral proceedings statement brief as of June 28, 2016 was submitted by the demandee. The oral proceedings were conducted on July 12, 2016. The advance notice of the trial decision was given on August 1, 2016.

No response was made to the advance notice of the trial decision.

No. 2 The Patent invention

The description of Claim 2 of the scope of claims of the Patent is as follows (hereinafter the invention regarding Claim 2 is referred to as "the Patent invention").

[Claim 1]

An inspection machine for printed matter in the form of printed sheets, such as securities, notes, banknotes, passports, and other similar documents,

with a sheet feeder (1),

wherein the machine comprises a first sheet inspection unit with a first inspection cylinder (4) for transporting a printed sheet during inspection, first illumination means (5) and a first linear camera (6) connected to an analyzing device for taking an image of the printed sheet while it is transported on the first inspection cylinder (4),

a second sheet inspection unit with a second inspection cylinder (7) for transporting a printed sheet during inspection, second illumination means (8) and a second linear camera (9) connected to the analyzing device for taking an image of the printed sheet while it is transported on the second inspection cylinder (7),

a third sheet inspection unit with a third inspection cylinder (12) for transporting a printed sheet during inspection, third illumination means (13) and a third linear camera (14) connected to the analyzing device for taking an image of the printed sheet while it is transported on the third inspection cylinder (12),

an input transfer cylinder (3) to successively bring the printed sheets to the first inspection unit,

and an output transfer cylinder (17) to take away the printed sheets from the third inspection unit,

wherein the input transfer cylinder (3), the first inspection cylinder (4), the second inspection cylinder (7), the third inspection cylinder (12), and the output transfer cylinder (17) are disposed one after the other in direct contact so that a printed sheet is

transferred directly and successively from the input transfer cylinder (3) to the first inspection cylinder (4), the second inspection cylinder (7), the third inspection cylinder (12), and the output transfer cylinder (17), and

the first sheet inspection unit, the second sheet inspection unit, the third sheet inspection unit, the input transfer cylinder (3), and the output transfer cylinder (17) are configured in such a manner that the inspected printed sheet is taken away from the first, second, or third inspection cylinder (4, 7, 12) only when the inspection of the printed sheet is completed by the first, second, or third sheet inspection unit.

[Claim 2]

An inspection machine as claimed in claim 1, wherein the first inspection cylinder (4) is a transparent cylinder, the first illuminating means (5) is placed inside the transparent cylinder, and the first linear camera (6) is placed outside the transparent cylinder for inspecting a printed sheet as a diapositive.

No. 3 Allegations of the parties

1 Outline of the demandant's allegation

The demandant demanded the decision that the patent regarding the Patent invention shall be invalidated, and that the costs in connection with the trial shall be borne by the demandee. The demandant alleged the reasons for invalidation as described below, and submitted Evidence A Nos. 1 to 7 as means of proof.

[Reasons]

The Patent invention is an invention which could be easily invented by a person skilled in the art on the basis of the invention described in Evidence A Nos. 1 to 5, and the demandee should not be granted a patent for the invention in accordance with the provisions of Article 29-2 of the Patent Act.

Thus, the patent according to the Patent invention falls under Article 123-1 (2) of the Patent Act, and should be invalidated.

[Means of proof]

Evidence A No. 1: Japanese Unexamined Patent Application Publication No. 2000-85095

Evidence A No. 2: Japanese Unexamined Patent Application Publication No. 2001-509746

Evidence A No. 3: Japanese Unexamined Patent Application Publication No. H10-

337935
Evidence A No. 4: Japanese Unexamined Patent Application Publication No. 2001-101473
Evidence A No. 5: International Publication No. WO03/052394
Evidence A No. 6: Japanese Unexamined Patent Application Publication No. 2005-513436
Evidence A No. 7: Copy of trial decision of Invalidation No. 2011-800218

2 Outline of the demandee's allegation

The demandee demanded the decision that the demand for trial of the case was groundless and that the costs in connection with the trial shall be borne by the demandant. The demandee alleged that none of the reasons for invalidation alleged by the demandant has reasons, and submitted Evidence B Nos. 1 to 2 as means of proof.

[Means of proof]
Evidence B No. 1: Judgment by the Intellectual property high court of Japan October 28, 2010 (2010 (Gyo-Ke) 10064)
Evidence B No. 2: Judgment by the Intellectual property high court of Japan January 28, 2009 (2008 (Gyo-Ke) 10096)

No. 4 Matters described in Evidences A

1 Evidence A No. 1

Evidence A No. 1 (Japanese Unexamined Patent Application Publication No. 2000-85095), which is a publication distributed before the date of the Priority Claim (hereinafter referred to as "the Priority date") of the application regarding the Patent, describes the following matters with drawings. ("..." means snip. The same applies hereafter.)

A-1 A:
"[Claim 1] The inspection rotary printing machine comprising an inspection part including a first inspection cylinder holding a sheet and conveying the sheet wound on the periphery thereof, a first inspection device arranged facing the periphery of the first inspection cylinder and inspecting the sheet conveyed by the first inspection cylinder, a second inspection cylinder arranged in contact with the first inspection cylinder and conveying the sheet received from the first inspection cylinder and wound on the

periphery thereof, and a second inspection device arranged facing the periphery of the second inspection cylinder and inspecting the sheet conveyed by the second inspection cylinder, and
a printing part which executes printing on the sheet inspected by the inspection part ..." ([Claim 1])

A-1 B:
"[0001]
[Technical field of the invention] The invention relates to an inspection rotary printing machine which inspects a sheet and prints a number or a seal on the sheet.
[0002]
[Prior art] In printing of securities, a seal or a number is additionally printed on a sheet with a design printed thereon. As for a printed matter of this type, the design is printed on a sheet by a design printing machine, and printing quality of the design is inspected by the inspection rotary printing machine. A seal or a number is printed on only a sheet passing the inspection, thereby preventing management trouble or production of defective products." ([0001]-[0002])

A-1 C:
"[0016] The example illustrates an inspection rotary printing machine which prints a sequential number and a seal additionally on a sheet with a design printed thereon. A paper feeding part 1 includes a sheet stacking plate 6 for stacking a plurality of sheets 5 with multiple designs printed thereon. A sucking device (not shown) sucks each of the sheets 5 on the stacking plate 6, and feeds them onto a feeder board 7. A swing device 8 feeds the sheets to an inspection part 2 via a transfer cylinder 9.
[0017] The inspection part 2 includes a first inspection cylinder 10 for conveying a sheet 5 held and wound on the periphery thereof, a surface inspection camera 11, serving as a first inspection apparatus, which is arranged to face the periphery of the first inspection cylinder 10, to inspect the sheet 5 conveyed by the first inspection cylinder 10, a second inspection cylinder 12 arranged in contact with the first inspection cylinder 10, to convey the sheet 5 received from the first inspection cylinder 10 wound on the periphery thereof, and a back inspection camera 13, serving as a second inspection apparatus, which is arranged to face the periphery of the second inspection cylinder, to inspect the sheet 5 conveyed by the second inspection cylinder 12.
[0018] The printing part 3 includes a first pressure cylinder 14 arranged in contact with the second inspection cylinder 12, to convey the sheet 5 received from the second

inspection cylinder 12 wound on the periphery thereof, and a seal cylinder 15 for printing a seal on the sheet 5 conveyed by the first pressure cylinder 14, ..." ([0016]-[0018])

A-1 D:
"[0025] In the above configuration, the surface of the sheet 5 conveyed from the paper feeding part 1 to the inspection part 2 is inspected by the surface inspection camera 11 on the first inspection cylinder 10 first, and it is transferred to the second inspection cylinder 12. Then the back inspection camera 13 inspects the back of the sheet.
[0026] The sheet 5 is directly transferred from the second inspection cylinder 12 to the first pressure cylinder 14 of the printing part 3 ..." ([0025]-[0026])

A-1 E:
"[0034] The diameters of the first pressure cylinder 14, the second pressure cylinder 19, the first inspection cylinder 10, and the second inspection cylinder 12 are twice the diameters of first to fourth number cylinders 16, 17, 20, 21. The sheet 5 passes through an inspection position of the back inspection camera 13. Printing quality can be reliably determined before a printing position of the seal cylinder 15, thereby preventing a malfunction of the device." ([0034])

The following matters can be also recognized.

A-1 F:
According to the descriptions, "the surface is inspected by the surface inspection camera 11 first, ... Then the back inspection camera 13 inspects the back of the sheet" in A-1 D, and "Printing quality can be reliably determined before a printing position of the seal cylinder 15" in A-1 E, it is obvious that the "inspection rotary printing machine" in A-1 A includes determination means for determining printing quality on the basis of the inspection by the surface inspection camera 11 and the back inspection camera 13.

A-1 G:
In light of the description in A-1 C, "The example illustrates an inspection rotary printing machine which prints a sequential number and a seal additionally on a sheet with a design printed thereon. A paper feeding part 1 includes a sheet stacking plate 6 for stacking a plurality of sheets 5 with multiple designs printed thereon. A sucking device (not shown) sucks each of the sheets 5 on the stacking plate 6, and feeds them

onto a feeder board 7. A swing device 8 feeds the sheets to an inspection part 2 via a transfer cylinder 9," and the arrangement of the transfer cylinder 9 and the first inspection cylinder 10 in FIG. 1, it can be said that the inspection rotary printing machine includes the paper feeding part 1, and the transfer cylinder 9 for conveying the sheets 5 sequentially to the first inspection cylinder 10.

A-1 H:

In light of the descriptions in A-1 C, "a second inspection cylinder 12 arranged in contact with the first inspection cylinder 10, to convey the sheet 5 received from the first inspection cylinder 10 wound on the periphery thereof" and "a first pressure cylinder 14 arranged in contact with the second inspection cylinder 12, to convey the sheet 5 received from the second inspection cylinder 12 wound on the periphery thereof," and the arrangement of the cylinders including the transfer cylinder 9 and the first inspection cylinder 10, it can be said that the transfer cylinder 9, the first inspection cylinder 10, the second inspection cylinder 12, and the first pressure cylinder 14 are arranged in contact with each other.

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

"Inspection rotary printing machine for a sheet 5 with a design of securities, or the like, printed thereon,

with a paper feeding part 1,

including a first inspection cylinder 10 for conveying the sheet 5, a surface inspection camera 11 for inspecting the sheet 5 conveyed by the first inspection cylinder 10, a second inspection cylinder 12 arranged in contact with the first inspection cylinder 10, to convey the sheet 5 received from the first inspection cylinder 10, a back inspection camera 13 for inspecting the sheet 5 conveyed by the second inspection cylinder 12, and determination means of determining printing quality on the basis of the inspection by the surface inspection camera 11 and the back inspection camera 13,

a transfer cylinder 9 for sequentially transferring the sheet 5 to the first inspection cylinder 10, and a first pressure cylinder 14 for conveying the sheet 5 received from the second inspection cylinder 12,

the transfer cylinder 9, the first inspection cylinder 10, the second inspection cylinder 12, and the fist pressure cylinder 14 being in contact with each other, the printed sheet 5 being transferred from the transfer cylinder 9 to the first inspection cylinder 10, the second inspection cylinder 12, and the first pressure cylinder 14, and

the sheet 5 being transferred to the second inspection cylinder 12 after the surface there of is inspected by the surface inspection camera 11 on the first inspection cylinder 10."

2 Evidence A No. 2

Evidence A No. 2 (Japanese Unexamined Patent Application Publication No. 2001-509746), which is a publication distributed before the Priority date, describes the following matters with drawings.

A-2 A:

"1. A device for qualitative assessment of processed sheets (1) comprising essentially imaging devices (34, 36) and at least one drum (17, 18) for conveying the sheets (1) and qualitatively assessing the processed sheets (1), the drum including a first holding device (27) for holding the beginning of the sheet (1), configured so that the drum (17, 18) includes at least one second holding device (28) for holding the end of the sheet (1), and that the holding device is arranged to move for stretching the sheet (1) before inspecting the sheet (1)." (p. 2 l. 2-l. 9)

A-2 B:

"A sheet processing machine includes a device for qualitatively assessing the processed sheet 1. In the illustrated example, a sheet rotary printing machine for printing on the front and the back of a sheet is used. For simplicity, only a sheet conveying apparatus located at the rear of a printing unit to be used before stacking the sheets 1 on piles 4, 6, 7 of a paper discharge device 8 is illustrated.

The processed sheets are, for example, printed sheets, embossed sheets, or sheets with predetermined design formed thereon in other ways." (p. 6 l. 1-l. 7)

A-2 C:

"Each of the drums 17, 18 includes a specific inspection device. The inspection device is formed essentially of illumination devices 32, 33, and imaging devices 34, 36. In the example, a plurality of stroboscope flashes 37 are arranged as the illumination devices 32, 33. The stroboscope flashes 37 are arranged to uniformly irradiate the sheet to be inspected. Specifically, the distances and angles of light flow-out surfaces of the stroboscope flashes 37 can be adapted to the periphery of the drums 17, 18 and objective lenses of the imaging devices 34, 36.

Each of the imaging devices 34, 36 includes at least one CCD area camera

(Flaechenkamera), preferably, two CCD cameras 34, 36 arranged in an axial direction of the drums 17, 18. Four image in the sheets to be inspected, corresponding preferably to quadrant sections, are individually captured, and an analyzing device arranged downstream of the CCD area cameras 34, 36 forms an overall image by superimposing the images. The overall image is analyzed in accordance with a known method from German Patent Publication No. 4206366, for example. In order to capture each of the four images, each of the CCD area cameras 34, 36 captures two sequential images for one sheet to be inspected.

A single image of the sheet can be captured by a single CCD area camera." (p. 7 l. 18-p. 8 l. 7)

A-2 D:

"The operation form of the device by the invention is as follows.

A chain gripper device 12 of a first chain conveyer 9 receives a printed sheet from a pressure cylinder (not shown). The top 2 and back 3 of the sheet are inspected first only after the sheet is printed, or only after it is completely processed, as a final process in a sheet processing machine before paper discharge. The chain gripper device 12 conveys the sheet 1 horizontally and then vertically to a second chain conveyer 14 arranged above the piles 4, 6, 7, and transfers the sheet to the first drum 17. A gripper 27 of the drum 17 holds the beginning of the sheet to be inspected. After the drum 17 makes a nearly half turn, the end of the sheet 1 reaches an area of the sucking member 28, and the sucking member acts on with suction air and holds the end of the sheet 1. The sucking member 28 moves in axial and peripheral directions of the drum 17 to stretch the sheet. The sheet 1 is mounted on the drum 17 without wrinkle. In the example, the back 3 of the sheet does not face the drum 17, but faces the CCD area camera 34. The stroboscope flashes 37 irradiate the sheet, and both the CCD area cameras 34, 36 captures two images, individually, located in a preceding half part of the sheet. Thus, the sheet 1 is stretched before each of the first images is captured. After the drum 17 makes a turn in accordance with the length of the half of the sheet, two subsequent images are captured individually from a following half part of the sheet. After each of all images or the overall image in the sheet is captured, the sheet is transferred to the second drum 18 for inspecting the top 2 of the sheet. The gripper 27 of the first drum 17 transfers the beginning of the sheet 1 to the gripper 27 of the second drum 18. The sheet is transferred by the second drum 18 and the back 3 of the sheet facing outward on the first drum 17 is mounted on the periphery 31 of the second drum 18 to face inward. Therefore, the top 2 of the sheet faces outward. When the sucking

members 28 of the first and second drums 17, 18 reach a transfer area (a central area common to the drums 17, 18), the suction air of the sucking member 28 of the first drum 17 is cut off, and the sucking member 28 of the second drum 18 is activated with suction air. The end of the sheet is held by the sucking member 28 of the second drum 18, accordingly. The sucking member 28 of the second drum 18 moves in peripheral and axial directions of the second drum 18. The suction force produced by the sucking member 28 at the end of the sheet is set so that the sheet may be stretched, while the sheet starts sliding along the sucking member 28 before exceeding tear strength of the sheet.

Only after the sheet 1 is completely stretched on the second drum 18, each of the images in the preceding half part on the top 2 of the sheet is captured. Then, each of the two images in the subsequent half part of the sheet is detected. Only after the overall image on the sheet is completely detected, the beginning of the sheet is transferred to the chain gripper device 21 of the third chain conveyer 19." (p. 8 l. 13-p. 9-l. 6)

According to the above, Evidence A No. 2 describes the following invention (hereinafter referred to as "Invention A-2").

"A device for qualitative assessment of printed sheets 1, comprising

an inspection device including a drum 17 for conveying the printed sheet 1, and an illumination device 32 and a CCD area camera 34 for capturing an image on the sheet 1 mounted on the drum 17, and

an inspection device including a drum 18 for conveying the printed sheet 1, and an illumination device 33 and a CCD area camera 36 for capturing an image on the sheet 1 mounted on the drum 18,

configured to transfer the sheet 1 to the second drum 18 for inspecting the top 2 of the sheet 1 only after all of individual images, or an overall image, on the back 3 of the sheet 1 mounted on the drum 17 is captured, and to transfer the beginning of the sheet 1 to a chain gripper device 21 of a third chain conveyer 19 only after the overall image on the sheet 1 mounted on the drum 18 is completely captured."

3 Evidence A No. 3

Evidence A No. 3 (Japanese Unexamined Patent Application Publication No. H10-337935), which is a publication distributed before the Priority date, describes the following matters with drawings.

A-3 A:

"[Claim 1] An inspection device for a printed matter using infrared reflection absorption ink configured so that a printer for printing of a securities printing product with an infrared ink having spectrum characteristics different from those under white light in an infrared region includes infrared irradiation means for irradiating the printed and conveyed securities printing product with infrared light, image receiving means for receiving an image of the securities printing product irradiated with the infrared light, a storage unit which stores in advance an image obtained by irradiating the securities printing product regularly printed with the infrared ink with the infrared light, as a reference value, and determination means which reads the image of the reference value stored in the storage unit, compares it with the image received by the image receiving means, and determines whether the result falls outside a predetermined allowable value." ([Claim 1])

A-3 B:
"[0014] As shown in FIG. 4 (b), contact line sensors unit or CCD line sensors 42 are arranged horizontally with respect to a printing direction of a banknote sheet 40. The whole surface of the banknote sheet 40 can be inspected as the banknote sheet 40 is conveyed ..." ([0014])

A-3 C:
"[0020]
[Example] FIG. 1 and FIG. 2 illustrate the infrared printed matter inspection device relating to one example of the invention. As shown in the FIGs, the example is one configured by connecting a compact intaglio printing machine with a plurality of contact line sensors 3 to a signal processor 12 and a personal computer 11, to inspect a banknote sheet 14 on line. A printed banknote sheet 14 is conveyed in contact on a pressure cylinder 13 rotating at a constant speed, and the banknote sheet 14 includes small cut surfaces (hereinafter referred to as "inspection objects") formed horizontally in three lines.
[0021] The contact line sensors 3 are arranged for each of the lines of inspection objects on the banknote sheet 14. Each of the line sensors 3 is connected to the signal processor 12. The contact line sensor 3 includes, as described above, an infrared LED array, an imaging optical component, a photodiode array, and an image signal control IC, and detects infrared images of the inspection objects, to output signals which are proportional to the gray levels of the images in time series. ..." ([0020]-[0021])

A-3 D:
"[0023] The rotary encoder 1 is configured to output a pulse shown in FIG. 6 (a) every time the pressure cylinder 13 rotates at a predetermined angle, regardless of time, and controls scanning of the line sensors 3 or the start of operation of the A/D converter 9, as shown in FIG. 6 (c)-(e), by use of the pulse. FIG. 6 (b) is a reference clock. The photoelectric switch 2 is a device which outputs a signal indicated in FIG. 6 (f) when the inspection objects enter the line sensors 3, and A/D converts an image signal with the signal, as shown in FIG. 6 (g), to be stored in the image memory 10." ([0023])

A-3-E:
"[0028] ... In inspection, the amount of light of the infrared LEDs in the line sensors 3 is set. The banknote sheet 14 is supplied for printing. When the sheet printed during conveyance on the pressure cylinder 13 is conveyed in contact with the pressure cylinder, the line sensors 3 acquire the images of the inspection objects from the printed banknote sheet 14. The line sensors 13 may detect the images not only on the pressure cylinder, but also on the cylinder after printing before paper discharge, or during conveyance by the chain gripper." ([0028])

According to the above, Evidence A No. 3 describes the following invention (hereinafter referred to as "Invention A-3").
"An infrared printed matter inspection device configured to set the amount of light of infrared LEDs in line sensors 3 in inspection, to supply a banknote sheet 14 for printing, and to acquire images of inspection objects on the banknote sheet 14 printed during conveyance on a pressure cylinder 13 and conveyed in contact with the pressure cylinder, by means of the line sensors 3 which are start-controlled by a rotary encoder 1."

4 Evidence A No. 4

Evidence A No. 4 (Japanese Unexamined Patent Application Publication No. 2001-101473), which is a publication distributed before the Priority date, describes the following matters with drawings.

A-4 A:
"[0009] ... The sheet identification device which irradiates a sheet with a design with light, and receives at least reflected light, out of transmitted light and the reflected light obtained from the sheet, to identify the design on the sheet as an object..." ([0009])

A-4 B:
"[0013] FIG. 1 illustrates a configuration example of a main part of the sheet (hereinafter exemplified by "bill") identification device according to the invention, as a block diagram. In FIG. 1, the optical sensor part 10 comprises an image line sensor formed by arranging many detectors on predetermined positions on a bill conveyance path (not shown) perpendicularly to a conveyance direction of a sheet 1, and including an LED array, a photodiode array, or the like. In the optical sensor part 10, the bill 1 is scanned planarly as the bill is conveyed, and a distribution of physical amount, such as reflected light or transmitted light in each of the positions on the bill, is detected. ..." ([0013])

A-4 C:
"[0020] FIG. 2 illustrates a configuration example of a transmission/reflective line sensor 100 having a multi-wavelength light source. The line sensor 100 includes long light-emitting and light-receiving/emitting parts 110, 120 facing each other. The bill, as a medium to be identified, is conveyed on a bill passage between the light-emitting part 110 and the light-receiving/emitting part 120. ..." ([0020])

According to the above, Evidence A No. 4 describes the following invention (hereinafter referred to as "Invention A-4").
"The sheet identification device which irradiates a sheet with a design with light, and receives at least reflected light, out of transmitted light and the reflected light obtained from the sheet, to identify the design of the sheet as an object, configured so that a bill is conveyed on a bill passage between a light-emitting part 110 and a light-emitting/receiving part 120 of an image line sensor 100."

(5) Evidence A No. 5

Evidence A No. 5 (International Publication No. WO03/052394) which is a publication distributed before the Priority date describes the following matters with drawings. (a umlaut, o umlaut, u umlaut, and Eszett are substituted with "ae," "oe," "ue," and "ss," respectively. The translation in ( ) is cited from the description in Evidence A No. 6 (National Publication of International Patent Application No. 2005-513436) which is a patent family of Evidence A No. 5.)

A-5 A:

(The device shown in FIG. 1 essentially consists of a transparent drum (01) with a retaining device (02), e.g. a gripper (02) and a sensor unit (03), e.g. a CCD camera (03), arranged outside the drum (01) and opposite a lighting unit (04) arranged inside the drum (01).

To inspect a material (05), especially a sheet printed with securities, the material (05) is fixed to the gripper (02) so that it can be moved along by rotational drive of the drum (01). The material (05) surrounds the drum (01) and nearly its entire surface lies on the transparent drum (01).

Through switching on the lighting device (04), the transparent drum (01) and the adjacent material (05) are illuminated and passed through by light beams, which then enter the lens of the sensor (03). Depending on the printed image on the material (05), the input signal detected by the sensor unit (03) changes such that, by means of a suitable evaluation unit, the printed image on the material (05) can be inspected through evaluation of the output signals from the sensor unit (03).

FIGURE 2 shows the device with the drum (01) the sensor unit (03), the lighting unit (04), and the material to be inspected (05) in longitudinal section.) (p. 3 l. 3-l. 22)

A-5 B:

(FIGURE 3 schematically shows the device with the drum (01) and the sensor (03) arranged on a pressure cylinder (06) in a securities-printing machine. By forming the grippers (02) properly on the drum (01) and the pressure cylinder (06), the securities printed in the printing machine can be continuously transferred from the-pressure cylinder (06) to the drum (01) and inspected there by the sensor (03).) (p. 4 the 6th line from the bottom to the last line)

A-5 C:

([Claim 1]

The device for inspecting a material (05), with a sensor unit (03) and a lighting unit (04), wherein the material to be inspected (05) is led on a transparent drum (01), wherein the lighting unit (04) is arranged on one side of the drum (01) and the sensor unit (03) on the other side of the drum (01), wherein the material has a printed image to be inspected,

wherein the lighting unit (04) is arranged within the periphery of the drum (01) and the corresponding sensor unit (03) is arranged outside the periphery of the drum (01).) (p. 6 l. 2-l. 9)

A-5 D:
([Claim 6]

The device described in Claims 1 and 2, including the sensor unit (03) formed as a CCD camera (03)) (p. 7 l. 1-l. 2)

The following matters can be also recognized.

A-5 E:

According to the description in A-5 A, "Through switching on the lighting device (04), the transparent drum (01) and the adjacent material (05) are illuminated and light beams pass therethrough, and then enter the lens of the sensor (03). Depending on the printed image on the material (05), the input signal detected by the sensor unit (03) changes such that, by means of a suitable evaluation unit, the printed image on the material (05) can be inspected through evaluation of the output signals from the sensor unit (03)," it can be recognized that the sensor unit (03) inspects the material (05) in transparency.

According to the above, Evidence A No. 5 describes the following invention (hereinafter referred to as "Invention A-5").
"The device for inspecting a material including a drum (01) which is a transparent drum (01), a lighting device (04) arranged inside the transparent drum (01), and a sensor unit (03) arranged outside the transparent drum (01) for inspecting the sheet with securities printed thereon as a diapositive."

No. 5 Judgment of the body
1 Comparison

The Patent invention is compared with Invention A-1.
(A) The "sheet 5 with a design of securities, or the like, printed thereon" in the Invention A-1 corresponds to the "printed matter in the form of printed sheets, such as securities, notes, banknotes, passports, and other similar documents" in the Patent invention, in light of the meaning of the expressions, function, or structure. The "paper-feeding part 1" corresponds to the "sheet feeder (1)." The "sheet 5" corresponds to the "printed sheet." The "determination means for determining printing quality on the basis of the inspection by the surface inspection camera 11 and the back inspection camera 13" corresponds to the "analyzing device." The "transfer cylinder 9" corresponds to the

"input transfer cylinder (3)."

(B) As "the surface of the sheet 5 is inspected by the surface inspection camera 11 on the first inspection cylinder 10" in the Invention A-1, the "inspection rotary printing machine" in the Invention A-1 corresponds to the "inspection machine" in the Patent invention. The "inspection rotary printing machine for a sheet 5 with a design of securities, or the like, printed thereon" in the Invention A-1 corresponds to the "inspection machine for printed matter in the form of printed sheets, such as securities, notes, banknotes, passports, and other similar documents" in the Patent invention.

(C) The "first inspection cylinder 10" and the "surface inspection camera 11" in the Invention A-1 constitute a sheet inspection unit. The "second inspection cylinder 12" and the "back inspection camera 13" constitute another sheet inspection unit. The Invention A-1 includes the "determination means for determining printing quality on the basis of the inspection by the surface inspection camera 11 and the back inspection camera 13." It is obvious that "the surface inspection camera 11 and the back inspection camera 13" are connected to the "determination means."

The "first inspection cylinder 10" and the "second inspection cylinder 12" in the Invention A-1, and the "first inspection cylinder (4)," the "second inspection cylinder (7)," and the "third inspection cylinder (12)" in the Patent invention are common in the point of an "inspection cylinder." The "surface inspection camera 11" and the "back inspection camera 13" in the Invention A-1, and the "first linear camera (6)," the "second linear camera (9)," and the "third linear camera (14)" in the Patent invention are common in the point of a "camera."

Thus, the description in the Invention A-1, "a first inspection cylinder 10 for conveying the sheet 5, a surface inspection camera 11 for inspecting the sheet 5 conveyed by the first inspection cylinder 10, a second inspection cylinder 12 arranged in contact with the first inspection cylinder 10, to convey the sheet 5 received from the first inspection cylinder 10, a back inspection camera 13 for inspecting the sheet 5 conveyed by the second inspection cylinder 12, and determination means of determining printing quality on the basis of the inspection by the surface inspection camera 11 and the back inspection camera 13" and
the description in the Patent invention,
"a first inspection cylinder (4) for transporting a printed sheet during inspection, first illumination means (5) and a first linear camera (6) connected to an analyzing device for taking an image of the printed sheet while it is transported on the first inspection

cylinder (4),

a second sheet inspection unit with a second inspection cylinder (7) for transporting a printed sheet during inspection, second illumination means (8), and a second linear camera (9) connected to the analyzing device for taking an image of the printed sheet while it is transported on the second inspection cylinder (7),

a third sheet inspection unit with a third inspection cylinder (12) for transporting a printed sheet during inspection, third illumination means (13), and a third linear camera (14) connected to the analyzing device for taking an image of the printed sheet while it is transported on the third inspection cylinder (12)" are common in the point of "including multiple sets of sheet inspection units comprising an inspection cylinder for conveying a printed sheet during inspection, and a camera connected to an analyzing device to capture an image of the sheet printed during conveyance on the inspection cylinder."

(D) The "transfer cylinder 9 for conveying the sheets 5 sequentially to the first inspection cylinder 10" in the Invention A-1 and the "input transfer cylinder (3) to successively bring the printed sheets to the first inspection unit" in the Patent invention are common in the point of an "input transfer cylinder for successively conveying the printed sheets to a sheet inspection unit located at the uppermost stream." The "first pressure cylinder 14 for conveying the sheet 5 received from the second inspection cylinder 12" in the Invention A-1 and the "output transfer cylinder (17) to take away the printed sheets from the third inspection unit" are common in the point of an "output transfer cylinder for taking out the printed sheets from a sheet inspection unit located at the lowermost stream."

As for the arrangement of "the transfer cylinder 9, the first inspection cylinder 10, the second inspection cylinder 12, and the first pressure cylinder 14" in the Invention A-1, it can be understood that the description, "arranged in contact with each other" is technically the same as "disposed one after the other in direct contact." Thus, as for the arrangement of the cylinders, the Invention A-1 and the Patent invention are common in that "the input transfer cylinder (3), each of the inspection cylinders of the multiple sheet inspection units, and the output transfer cylinder are arranged one after the other in direct contact so that the printed sheets are directly and continuously conveyed from the input transfer cylinder (3) to each of the inspection cylinders and the output transfer cylinder." Additionally, the Invention A-1 and the Patent invention are common in that "each of the sheet inspection units, the input transfer cylinder (3), and

the output transfer cylinder are configured so that the inspected printed sheets are taken out from the inspection cylinders after the printed sheets are inspected by the sheet inspection units."

According to the above (A)-(D), the Patent invention and the Invention A-1 have corresponding and different features as follows.

(Corresponding features)

Inspection machine for printed matter in the form of printed sheets, such as securities, notes, banknotes, passports, and other similar documents,

with a sheet feeder,

wherein the machine comprises multiple sets of sheet inspection units having an inspection cylinder for transporting a printed sheet during inspection, and a camera connected to an analyzing device for capturing an image of the sheet during conveyance on the inspection cylinder,

an input transfer cylinder for sequentially conveying the printed sheet to a sheet inspection unit located at the uppermost stream, and

an output transfer cylinder for taking out the printed sheet from a sheet inspection unit located at the lowermost stream,

wherein the input transfer cylinder, each of the inspection cylinders of the multiple sheet inspection units, and the output transfer cylinder are arranged in direct contact with other so that the printed sheets are directly and continuously conveyed from the input transfer cylinder to the inspection cylinders and the output transfer cylinder, and

each of the sheet inspection units, the input transfer cylinder, and the output transfer cylinder are configured so that the inspected printed sheets are taken out from the inspection cylinders after the printed sheets are inspected by the sheet inspection units.

(Different feature 1-1)

The Patent invention comprises three sets of sheet inspection units, and the camera in each of the sheet inspection units is a linear camera. The Invention A-1 comprises two sets of sheet inspection units, and it is unclear whether the camera in each of the sheet inspection units is a linear camera.

(Different feature 1-2)

The sheet inspection unit of the Patent invention includes illumination means, while it is unclear whether the sheet inspection unit in the Invention A-1 includes illumination means.

(Different feature 1-3)

In the Patent invention, each of the sheet inspection units, the input transfer cylinder, and the output transfer cylinder are "configured in such a manner that the inspected printed sheet is taken away from the first, second, or third inspection cylinder (4, 7, 12) only when the inspection of the printed sheet is completed by the first, second, or third sheet inspection unit." In the Invention A-1, each of the sheet inspection units, the input transfer cylinder, and the output transfer cylinder are configured so that the inspected printed sheets are taken out from each of the inspection cylinders after the printed sheets are inspected by each of the sheet inspection units, while it is unclear whether the inspected printed sheet is taken away from each of the inspection cylinders only when the inspection of the printed sheet is completed by each of the sheet inspection units.

(Different feature 2)

In the Patent invention, the first inspection cylinder is a transparent cylinder, the first illumination means is arranged in the transparent cylinder, and the first linear camera is arranged outside the transparent cylinder to inspect the printed sheet as a diapositive. The Invention A-1 does not include the above configuration.

2 Judgment

(1) Regarding the different feature 1-1

A We will examine the different feature between the Invention A-1 having two sets of sheet inspection units and the Invention 1 having three sets of sheet inspection units.

It can be said that the number of sheet inspection units arranged in the inspection device can be a design matter to be selected by a person skilled in the art appropriately in consideration of the purpose of inspection or an inspection object. Therefore, in the Invention A-1, a person skilled in the art can decide that three sets of sheet inspection units are arranged as necessary.

B We will examine the linear camera next.

The Invention A-3 is "an infrared printed matter inspection device configured to set the amount of light of infrared LEDs in line sensors 3 in inspection, to supply a

banknote sheet 14 for printing, and to acquire images of inspection objects on the banknote sheet 14 printed during conveyance on a pressure cylinder 13 and conveyed in contact with the pressure cylinder, by means of the line sensors 3." The "line sensor" is recognized to correspond to a "linear camera" for sequentially capturing linear images of an object, in light of the function thereof.

The Invention A-4 is "a sheet identification device which irradiates a sheet with a design with light, and receives at least reflected light, out of transmitted light and the reflected light obtained from the sheet, to identify the design of the sheet as an object, configured so that a bill is conveyed on a bill passage between a light-emitting part 110 and a light-emitting/receiving part 120 of an image line sensor 100. The "image line sensor" is recognized to correspond to a "linear camera" in light of the function thereof.

A camera to be used as an inspection camera of the inspection device can be a design matter to be selected by a person skilled in the art appropriately in consideration of the purpose of inspection or an inspection object. Therefore, in the Invention A-1, a person skilled in the art can decide to select the linear camera used in the Inventions A-3 and A-4 as a camera for capturing an image of the sheet to be inspected, as necessary.

It cannot be recognized that it is significantly difficult to decide that three sets of sheet inspection units are arranged in the Invention A-1, and to select the linear camera used in the Inventions A-3 and A-4, as a camera for capturing an image of the sheet to be inspected, in the Invention A-1.

Thus, a person skilled in the art can easily decide to use three sets of sheet inspection units in the Invention A-1, and can easily achieve the configuration relating to the different feature 1-1 by applying the Inventions A-3 and A-4 to the Invention A-1.

(2) Regarding the different feature 1-2

The sheet inspection unit in the Patent invention includes illumination means, while it is unclear whether the sheet inspection unit in the Invention A-1 includes illumination means. However, it is technical common sense that an inspection device using a camera or the like includes illumination means, for optical inspection, in light of the Invention A-2.

Thus, a person skilled in the art can easily achieve the configuration relating to the different feature 1-2, in consideration of the technical common sense in the Invention A-1.

(3) Regarding the different feature 1-3

According to the description in Evidence A No. 1 A-1 D, "In the above configuration, the surface of the sheet 5 conveyed from the paper feeding part 1 to the inspection part 2 is inspected by the surface inspection camera 11 on the first inspection cylinder 10 first, and it is transferred to the second inspection cylinder 12. Then the back inspection camera 13 inspects the back of the sheet. The sheet 5 is directly transferred from the second inspection cylinder 12 to the first pressure cylinder 14 of the printing part 3," the above different feature relating to the configuration for the completion of the inspection is only a possible different feature, in light of the fact that it is normal for a person skilled in the art to understand that a sheet is transferred from the first inspection cylinder to the second inspection cylinder, from the second inspection cylinder to the first pressure cylinder, after the inspection is completed in each of the inspection cylinders, and the fact that there is no description in the Description about specific configuration for "taken away ... only when... completed" of the configuration that "the inspected printed sheet is taken away from the first, second, or third inspection cylinder (4, 7, 12) only when the inspection of the printed sheet is completed by the first, second, or third sheet inspection unit."

The Invention A-2 has a configuration that "the device for qualitative assessment of printed sheets 1, comprising an inspection device including a drum 17 for conveying the printed sheet 1, and an illumination device 32 and a CCD area camera 34 for capturing an image on the sheet 1 mounted on the drum 17, and an inspection device including a drum 18 for conveying the printed sheet 1, and an illumination device 33 and a CCD area camera 36 for capturing an image on the sheet 1 mounted on the drum 18, configured to transfer the sheet 1 to the second drum 18 for inspecting the top 2 of the sheet 1 only after all of individual images, or an overall image, on the back 3 of the sheet mounted on the drum 17 is captured, and to transfer the beginning of the sheet 1 to a chain gripper device 21 of a third chain conveyer 19 only after the overall image on the sheet 1 mounted on the drum 18 is completely captured." It is considered that the Invention A-2 employs the configuration of transferring the sheet to the following drum or conveyer only after the overall image of the sheet is captured, in order to improve the accuracy of transferring the sheet mounted on the drum and improve processing of the sheet, accordingly.

The Inventions A-1 and A-2 are inventions belonging to the same technical field on the device for inspecting a sheet conveyed by an inspection cylinder or a drum with an inspection camera. It is required to improve the accuracy of processing of a sheet

wound on a periphery of the inspection cylinder, as a general problem in the inspection device, as well as for reducing the size of the inspection device. It is possible to transfer the sheet to the next drum only after the inspection of the sheet, for the problem of improving the accuracy of transfer or processing of the sheet, regardless of whether or not the sheet mounted on the drum is stretched. Description or indication for excluding the configuration cannot be found exceptionally in Evidence A No. 1 and Evidence A No. 2. A person skilled in the art could easily conceive of the configuration of taking away the inspected sheet from each of the inspection cylinders only after the completion of inspection in each of the sheet inspection units, by applying the configuration of the Invention A-2 in the Invention A-1, accordingly.

Thus, a person skilled in the art could easily conceive of the configuration relating to the different features 1-3 by applying the Invention A-2 to the Invention A-1.

(4) Regarding the different feature 2

The Invention A-5 is "the device for inspecting a material including a drum (01) which is a transparent drum (01), a lighting device (04) arranged inside the transparent drum (01), and a sensor unit (03) including a CCD camera (03) arranged outside the transparent drum (01) for inspecting the sheet with securities printed thereon in transparency." The "transparent drum (01)" in the Invention A-5 corresponds to the "transparent cylinder" in the Patent invention, in light of the function thereof. The "lighting device (04)" in the Invention A-5 ad the "first illumination means (5)" in the Patent invention are common in the point of "illumination means."

The Inventions A-1 and A-5 belong to the common technical field of a device for inspecting a sheet with securities printed thereon, and have the common function for inspecting the printed sheet on a cylinder. In light of the fact that the Invention A-1 inspects "securities, or the like," a person skilled in the Invention A-1 can easily conceive of watermark inspection or inspection in transparency.

Although it is unclear whether the "CCD camera (03)" in the "sensor unit (03) including a CCD camera (03)" in the Invention A-5 is a linear camera, a CCD camera can be used as a linear camera generally, as described in Evidence A No. 3 (A-3 B "CCD line sensor 42"), and it can be said a design matter for a person skilled in the art to select a camera to be used as an inspection camera for the inspection device, as necessary, in consideration of the purpose of the inspection or inspection object, as indicated in the above "(1) Different feature 1-1" "c. Judgment of the body," "B." As indicated in the above "(1) Different feature 1-1" "c. Judgment of the body," "A," a

person skilled in the art can decide to use three sets of sheet inspection units in consideration of the purpose of the inspection or inspection object, while the order of arranging the sheet inspection units can be decided in accordance with the order of inspection items.

In applying the Invention A-5 to the Invention A-1, a CCD camera can be a linear camera and the inspection as a diapositive can be conducted in the first sheet inspection unit as necessary. Thus, the configuration, "the inspection cylinder is a transparent cylinder, the first illuminating means is placed inside the transparent cylinder, and the first linear camera is placed outside the transparent cylinder for inspecting a printed sheet as a diapositive" can be easily attained by a person skilled in the art on the basis of the Inventions A-1 and A-5.

Regarding the above, the demandee alleges in the written reply for the trial case p. 20 that "... in Evidence A No. 5, a linear camera is not disclosed. Evidence A No. 5 does not disclose the matters specifying the invention of 'the first linear camera' for constituent component M of the Patent invention, at least. There is only the disclosure about the constituent component M that the camera is placed outside the transparent cylinder for inspecting the printed sheet in transparency."

The demandee also alleges in the written reply for the trial case p. 21-22 that "the allegation of the demandant that it is only a design matter for a person skilled in the art to employ a linear camera in the Invention A-1 by selection is groundless," and that "... Although the invention described in Evidence A No. 5 is 'well-known,' it cannot be said that a person skilled in the art can easily conceive of the idea of applying it to Evidence A No. 1-No. 4. There is a need to examine whether the combination is easy or not, from the point of view of the commonality of the problem and indication in the contents. ... The inventive step should be determined while taking into consideration that the configurations of the Patent invention are related to each other, and the problem can be solved only by combining all of them. However, the problem of the Patent invention and integral mean for solving the problem are not described or indicated at all in Evidence A No. 1 and Evidence A No. 5 (and Evidences A No. 2 to No. 4). It is unlikely that a person skilled in the art can conceive of the configuration relating to the different features by applying the technical matters described in Evidence A No. 5 (and Evidences A No. 2 to No. 4) to Evidence A No. 1."

The demandee also alleges in the written reply for the trial case p. 22 that "... The linear camera is generally larger than a lighting device, such as a fluorescent lamp or an LED. A cylinder diameter can be made smaller by arranging the lighting device

inside the cylinder and arranging the linear camera outside the cylinder, than in the case where the linear camera is arranged inside the cylinder and the lighting device is arranged outside the cylinder, thereby configuring a further compact inspection machine, which solves the problem of the Patent invention. When the linear camera, which needs careful maintenance as compared with the lighting device, is arranged outside the cylinder, easy maintenance is achieved, so that a new problem of maintenance on the introduced linear camera can be solved as well.

The cameras in the Inventions A-1 and A-5 are not a linear camera, and there is no description or indication about the problem of the Patent invention. A person skilled in the art has no motive to apply the invention described in Evidence A No. 5 to Evidence A No. 1, for the Patent invention.

... The problems of the Invention A-1 and Invention A-5 are completely different. A person skilled in the art has no motive to apply the invention described in Evidence A No. 5 to Evidence A No. 1 for the Patent invention."

However, in light of the above, it can be said a design matter for a person skilled in the art to select a camera to be used as an inspection camera for the inspection device, in consideration of the purpose of the inspection and inspection object. The Inventions A-1 and A-5 belong to a common technical field and have a common function. A person skilled in the Invention A-1 can easily conceive of the idea of inspection as a diapositive. Therefore, it cannot be said that there is significant difficulty in applying the Invention A-5 to the Invention A-1. The effect that cylinder diameter can be reduced and easy maintenance can be attained by arranging a camera outside the cylinder as compared with the case where the lighting device is arranged outside the cylinder, can be predicted naturally by a person skilled in the Invention A-5.

Thus, the allegation is groundless.

Therefore, a person skilled in the art could easily apply the Invention A-5 to the Invention A-1 for the configuration relating to the different feature 2.

(5) Summary

In light of all of the configurations relating to the different feature 1-1, different feature 1-2, different feature 1-3, and different feature 2, the working effect of the Patent invention can be easily predicted by a person skilled in the art on the basis of the Inventions A-1 to A-5, and it is not remarkable. The Patent invention could be easily invented by a person skilled in the art on the basis of the Inventions A-1 to A-5.

Regarding the above points, in the written reply for the trial case p. 6, "... the problem of the invention and the means for solving the problem are not taken into consideration, the different features are acknowledged in small pieces, and a determination is made as to whether or not the different features could be easily conceived. It is extremely inappropriate as a way to recognize the different features and to determine whether the different features could be easily conceived."

In the written reply for the trial case p. 11-14, the demandee alleges that "... the problem of the Patent invention is solved by the following means for solving the problem,

<1> The inspection camera is a linear camera.

<2> Three inspection cylinders are used.

<3> Only after the completion of inspection of the printed sheet in each of the inspection units, the inspected printed sheet is taken away from each of the inspection cylinders.

<4> The first inspection cylinder is a transparent cylinder. The first illuminating means is arranged inside the transparent cylinder. The linear camera is arranged outside the transparent cylinder for inspecting the printed sheet as a diapositive.

What is important is, as described above, that the means for solving the problem are related to each other, and the problem can be solved only when all of them are combined. The means for solving the problem are to be treated as an integrated configuration. ... From the point of view of the problem of the Patent invention and the means for solving the problem, it is obviously improper to acknowledge the different features and to determine the inventive step while treating the means for solving the problem <1> to <4> individually. The different features should be acknowledged while treating the configurations relating to the means for solving the problem as an integrated configuration. The inventive step should be determined by taking into consideration that the configurations are related to each other and the problem can be solved only when all of them are combined." (Note by the body: Circled numbers are substituted with <1> or the like.)

However, as described above, in determining the inventive step of the Patent invention, whether or not each of the configurations can be easily conceived is examined, while the configurations relating to the different features 1-1, 1-2, ... 2 are treated as independent configurations, then the working effect of the Patent invention can be easily predicted by a person skilled in the art on the basis of the inventions A-1

to A-5 in light of all of the configurations relating to the different features 1-1, 1-2, ... 2, and the configurations relating to the means for solving the problem of the Patent invention are treated as an integrated one configuration or related configurations. Thus, the allegation is groundless.

No. 6 Closing

As described above, the demandee should not be granted a patent for the invention relating to Claim 2 of the Patent in accordance with the provisions of Article 29-2 of the Patent Act. The patent of the invention relating to Claim 2 falls under Article 123-1(2) and should be invalidated.

The costs in connection with the trial shall be borne by the demandee under the provisions of Article 61 of the Code of Civil Procedure which is applied mutatis mutandis in the provisions of Article 169-2 of the Patent Act.

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

January 5, 2017

Chief administrative judge: TAKAGI, Akira
Administrative judge: HIRASE, Tomoaki
Administrative judge: TANAKA, Shigehiko