Trial decision

Invalidation No. 2011-800218

Tokyo, Japan
Demandant KOMORI Corporation

Tokyo, Japan
Attorney MITSUISHI, Toshiro

Tokyo, Japan
Attorney MITSUISHI, Tadahiro

Tokyo, Japan
Attorney MITSUISHI, Shunpei

Tokyo, Japan
Attorney TANAKA, Yasuyuki

Tokyo, Japan
Attorney MATSUMOTO, Hiroshi

Tokyo, Japan
Attorney YAMADA, Tetsuzo

Switzerland
Demandee KBA-NotaSys SA

Tokyo, Japan
Attorney AOKI, Atsushi

Tokyo, Japan
Attorney SHIMADA, Tetsuro

Tokyo, Japan
Attorney MITSUHASHI, Shinji

Tokyo, Japan
Attorney TANIMITSU, Masaharu

Tokyo, Japan
Attorney OHASHI, Koshi

Tokyo, Japan
Attorney SHINOZAKI, Masami

The decision on the case of the patent invalidation trial between the above parties on Japanese Patent No. 4700052, entitled "Inspection machine and process", dated August 22, 2012 came with a court decision of revocation of the trial decision (2012 (Gyo-ke)10340, rendition of decision on July 8, 2013) at the Tokyo High Court, the case was proceeded further, and another trial decision was handed down as follows:

Conclusion

The correction shall be approved.

The patent regarding the inventions according to Claims 1 and 3 to 18 for Japanese Patent No. 4700052 was invalidated.

The demand for trial for the invention according to Claim 2 of Japanese Patent No. 4700052 was groundless.

Of the costs in connection with the trial, one-eighteenth shall be borne by the demandant, and seventeen-eighteenth shall be borne by the demandee.

Reason

No. 1 History of the procedures

According to Patent No. 4700052 (Japanese Patent Application No. 2007-509002), the application of the case was submitted on April 15, 2005 as an international filing date (Priority Claim under the Paris Convention: April 22, 2004, European Patent Office), and the establishment of the patent right was registered on March 11, 2011. After that, the trial for invalidation was demanded by the demandant, KOMORI Corporation. History after the demand will be arranged and indicated below.

(1) October 27, 2011 submission of the written demand for trial
(2) February 9, 2012 submission of the written reply
(3) February 9, 2012 submission of the written correction request
(4) May 8, 2012 submission of the oral proceedings statement brief (by demandant)
(5) June 5, 2012 submission of the oral proceedings statement brief (by demandee)
(6) June 13, 2012 submission of the written statement (by demandant)
(7) June 19, 2012 conduct oral proceeding
(8) July 3, 2012 submission of the written statement (by demandant)
(9) July 13, 2012 submission of the written statement (by demandee)
(10) August 22, 2012 trial decision that "The correction shall be approved. The trial of the case was groundless. The costs in connection with the trial shall be borne by the demandant."
(11) October 1, 2012 suit against trial decision (2012 (Gyo-ke) 10340)
(12) July 8, 2013 rendition of judgment to revoke parts of "The appeal of the case was groundless." and "The costs in connection with the trial shall be borne by the demandant." in the trial decision
(13) August 21, 2013 final and binding the judgment, and remand of the invalidation trial case

No. 2 Correction of the case and the Invention
1. Contents of correction of the case

The correction by the request for correction submitted on the February 9, 2012 (referred to as "Correction of the case" below) is to correct description and claims attached to the application of Patent No. 4700052 as substitute claims (referred to as "Corrected claims" below) and the substitute description (referred to as "corrected description" below) attached to the written correction request dated February 9, 2012. The contents of the correction include the following corrections 1 to 6.

(1) Correction 1

In claim 1 in the claims attached to the application, "a first camera", "a second camera", and "a third camera" are respectively corrected to "a first linear camera", "a second linear camera", and "a third linear camera".

(2) Correction 2

In claim 1 in the claims attached to the application, "first, second, or third

inspection cylinder ((4, 7, 12)" is corrected to "first, second, or third inspection cylinder (4, 7, 12)".

(3) Correction 3

In claim 2 in the claims attached to the application, "the first camera" is corrected to "the first linear camera".

(4) Correction 4

In claim 7 in the claims attached to the application, "gribber" is corrected to "gripper".

(5) Correction 5

In claim 11 in the claims attached to the application, "each of the first, second, and third cameras (6, 9, 14) is a linear camera that takes successive linear images of the printed sheet being inspected" is corrected to "each of the first, second, and third linear cameras (6, 9, 14) takes successive linear images of the printed sheet being inspected".

(6) Correction 6

In claim 13 in the claims attached to the application, "first inspection by positive transparency", "once the first inspection is terminated", "the second inspection is carried out", "once the second inspection is terminated", "the third inspection is carried out", and "once the third inspection is carried out" are respectively corrected to "first inspection by positive transparency by the first linear camera", "once the first inspection by the first linear camera is terminated", "the second inspection is carried out by the second linear camera", "once the second inspection by the second linear camera is terminated", "the third inspection is carried out by the third linear camera", and "once the third inspection by the third linear camera is terminated".

2. Determination whether the correction can be made

(1) Regarding correction 1

The correction 1 technically limits the "first camera", the "second camera" and the "third camera" before the correction respectively to the "first linear camera", the "second linear camera", and the "third linear camera" and falls into the correction which intends to restrict the scope of claims.

Also, the correction is made based on the description that "Preferably, the cameras used are linear CCD cameras that take successive linear images of the sheet being inspected." (paragraph [0020]). Therefore, the correction is within the matters described in the specification, the claims or the drawings attached to the application

and does not substantially extend or change the claims.

(2) Regarding correction 2

The correction 2 deletes one of double left brackets in "((4, 7, 12)" before the correction. Therefore, the correction 2 falls into the correction which intends to correct errors in the description.

Also, the correction is within the matters described the specification, the claims, or the drawings attached to the application and does not substantially extend or change the claims.

(3) Regarding correction 3

The correction 3 matches the description in claim 2 to the correction which intends to restrict the scope of the claims according to the correction 1. Therefore, the correction 3 falls into the correction which intends the clarification of an ambiguous description.

Also, the correction is within the matters described in the specification, the claims, or the drawings attached to the application based on the similar reason to that of the correction 1 and does not substantially extend or change the claims.

(4) Regarding correction 4

The correction 4 corrects the "gribber" before the correction to the "gripper". Therefore, the correction falls into the correction which intends the correction of the errors.

Also, the correction is made based on the description that "Preferably, the transfer and inspection cylinders are carrying only one set of grippers each" (paragraph [0023]) in the specification attached to the application. Therefore, the correction is within the matters described the specification, the claims, or the drawings attached to the application and does not substantially extend or change the claims.

(5) Regarding correction 5

The correction 5 matches the description in claim 11 to the correction which intends to restrict the claims according to the correction 1. Therefore, the correction 5 falls into the correction which intends the clarification of an ambiguous description.

Also, the correction is within the matters described in the specification, the claims, or the drawings attached to the application based on the similar reason to that

of the correction 1 and does not substantially extend or change the claims.

(6) Regarding correction 6

The correction 6 technically limits "the first inspection by the positive transparency", "once the first inspection is terminated", "the second inspection is carried out", "once the second inspection is terminated", "the third inspection is carried out", and "once the third inspection is terminated" before the correction respectively to "the first inspection by the positive transparency by the first linear camera", "once the first inspection by the first linear camera is terminated", "the second inspection is carried out by the second linear camera", "once the second inspection by the second linear camera is terminated", "the third inspection is carried out by the third linear camera", and "once the third inspection by the third linear camera is terminated". The correction 6 falls into the correction which intends to restrict the scope of the claims.

Also, the correction is within the matters described in the specification, the claims, or the drawings attached to the application based on the similar reason to that regarding the correction 1 and does not substantially extend or change the claims.

As described above, the corrections 1 to 6 intend to restrict the scope of the claims, to correct the errors, or to clarify the ambiguous description. All the corrections 1 to 6 are corrections within the matters described in the specification, the claims, or the drawings attached to the application and do not substantially extend or change the claims.

Accordingly, the Correction of the case has a purpose described in Articles 134-2(1)(i) to 134-2(1)(iii) of the Patent Act and falls under the provisions of Article 126(3) and 126(4) of the Patent Act which is applied mutatis mutandis pursuant to the provisions of Article 134-2(5) of the Patent Act. Therefore, the correction shall be approved.

3. The Invention

Claims 1 to 18 of the scope of claims of the Patent after the correction are described as follows. (Hereinafter, the inventions according to Claims 1 to 18 are respectively called "the Invention 1" to "the Invention 18", and these inventions are collectively called "the Invention". Also, the descriptions of Claims 1 to 18 are respectively called "Claim 1 of the case" to "Claim 18 of the case". Further, the specification and drawings of the Patent after the correction are collectively called

"the Specification of the case".).

[Claim 1]

An inspection machine for printed matter in the form of printed sheets, such as valuable securities, paper money, bank notes, a passport, and other similar paper, comprising:

a sheet feeder (1);

a first sheet inspection unit with a first inspection cylinder (4) for transporting a printed sheet during inspection, a 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, a second illumination means (8) and a second linear camera (9) connected to an 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, a third illumination means (13) and a third linear camera (14) connected to an 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 the 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 wherein the first to third sheet inspection units, the input transfer cylinder (3), and the output transfer cylinder (17) are arranged in such a manner that the inspected printed sheet is taken away from the first to third inspection cylinders (4, 7, 12) only once the inspection of the printed sheet is completed by the first to third inspection units.

[Claim 2]

The inspection machine as claimed in claim 1, wherein

the first inspection cylinder (4) is a transparent cylinder, the first illumination 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 by positive transparency as passing through the printed sheet.

[Claim 3]

The inspection machine as claimed in claim 1 or 2, wherein

the second sheet inspection unit inspects a first illuminated side of the printed sheet.

[Claim 4]

The inspection machine as claimed in claim 3, wherein

the third sheet inspection unit inspects a second illuminated side of the printed sheet.

[Claim 5]

The inspection machine as claimed in claim 1, wherein

the second and third sheet inspection units each further include at least one non-visible feature inspection unit (10, 11, 15, 16).

[Claim 6]

The inspection machine as claimed in claim 5, wherein

the non-visible feature inspection unit (10, 11, 15, 16) includes means for detecting IR, UV, or magnetic properties on the printed sheets.

[Claim 7]

The inspection machine as claimed in any one of claims 1 to 6, wherein

the first inspection cylinder (4), the second inspection cylinder (7), and the third inspection cylinder (12) are carrying only one set of grippers each, and the diameters of the first inspection cylinder (4), the second inspection cylinder (7), and the third inspection cylinder (12) are minimized for minimal transport and inspection time.

[Claim 8]

The inspection machine as claimed in any one of claims 1 to 7, 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 arranged in a zigzag manner such that a transport length of a printed sheet on each of the first inspection cylinder (4), the second inspection cylinder (7), and the third inspection cylinder (12) between an input location where a printed sheet is transferred onto the first inspection cylinder (4), the second inspection cylinder (7), or the third inspection cylinder (12) and an output location where the printed sheet is

transferred away from the first inspection cylinder (4), the second inspection cylinder (7), or the third inspection cylinder (12) is optimized for a predetermined sheet length.

[Claim 9]

The inspection machine as claimed in claim 8, wherein

the transport length of the printed sheet on the first inspection cylinder (4), the second inspection cylinder (7), or the third inspection cylinder (12) is slightly greater than the length of the printed sheet to be inspected.

[Claim 10]

The inspection machine as claimed in any one of claims 1 to 9, further comprising:

a marking unit (19, 20) placed downstream of the output transfer cylinder (17) for marking defective sheets.

[Claim 11]

The inspection machine as claimed any one of claims 1 to 10, wherein

each of the first to third linear camera (6, 9, 14) takes successive linear images of the printed sheet being inspected and is synchronized with the sheet transport on the associated first to third inspection cylinders (4, 7, 12).

[Claim 12]

The inspection machine as claimed in claim 11, wherein

each of the first to third inspection cylinders includes an encoder for synchronizing operation of the associated linear camera.

[Claim 13]

An inspection process for printed matter in the form of printed sheet such as valuable securities, paper money, bank notes, a passport, and other similar paper, wherein the process comprises the following steps:

successive printed sheets are transferred from a feeder to a first inspection unit in which a first inspection by positive transparency is carried out by a first linear camera for the inspection, and the printed sheets being transported in the first inspection unit by a first inspection cylinder (4);

once the first inspection by the first linear camera is terminated, the printed sheets are transferred to a second inspection unit in which a second inspection of a first side of the printed sheets is carried out by the second linear camera, the printed sheets being transported in the second inspection unit by a second inspection cylinder (7);

once the second inspection by the second linear camera is terminated, the printed sheets are transported to a third inspection unit in which a third inspection on

a second side of the printed sheets is carried out by the third linear camera, the printed sheets are transported in the third inspection unit by a third inspection cylinder (12);

once the third inspection by the third linear camera is terminated, the printed sheets are transferred to a marking unit and are marked as defective if the result of one of the first to third inspections shows a defect;

once marking has been performed, the printed sheets are transported in a delivery unit and sorted in delivery piles depending on whether or not the printed sheets are marked as being defective, and transfer of the printed sheets from the first inspection unit to the second inspection unit and that from the second inspection unit to the third inspection unit are made directly from the first inspection cylinder (4) to the second inspection cylinder (7) and from the second inspection cylinder (7) to the third inspection cylinder (12).

[Claim 14]

The inspection process as claimed in claim 13, wherein

the second and/or third inspection includes inspection of visible and/or non-visible features on the printed sheets.

[Claim 15]

The inspection process as claimed in claim 13 or 14, wherein

the diameter of each inspection cylinder is minimized for minimal transport and inspection time.

[Claim 16]

The inspection process as claimed in any one of claims 13 to 15, comprising:

a step of arranging the first to third inspection cylinders in such a manner that a transport length of a printed sheet on each inspection cylinder, between an input location where the printed sheet is transferred onto the inspection cylinder and an output location where the printed sheet is transferred away from the inspected cylinder, is optimized for a predetermined sheet length.

[Claim 17]

The inspection process as claimed in claim 16, wherein

the transport length of the printed sheet on the inspection cylinder is selected to be slightly greater than the length of the printed sheet to be inspected.

[Claim 18]

The inspection process as claimed in any one of claims 13 to 17, wherein

the first to third inspections include synchronizing operation of a linear camera that takes successive linear images of the printed sheet being inspected with the sheet transport on the associated inspection cylinder."

No. 3 Allegations of the parties

1. The demandant's allegation brief

The demandant demands the trial decision that the patent for the inventions according to Claims 1 to 18 of Japanese Patent No. 4700052 be found invalid and the costs in connection with the trial shall be borne by the demandee, alleges reasons for invalidation as follows, and submits Evidence A No. 1 to Evidence A No. 6 as means of proof.

(Reason 1)

The Inventions 1 to 12 could be provided easily by a person skilled in the art according to the invention described in Evidence A No. 1 and the inventions described in Evidence A No. 2 to Evidence A No. 6, and thus the demandee should not be granted a patent for the invention in accordance with the provisions of Article 29(2) of the Patent Act before revision in 2011 (the same shall apply hereinafter, regarding "the Patent Act".)

Also, the Inventions 13 to 18 could be provided easily by a person skilled in the art according to the invention described in Evidence A No. 3, the inventions described in Evidences A No. 1 to No. 2, and the inventions described in Evidences A No. 4 to No. 6, and thus the demandee should not g a patent for the invention in accordance with the provisions of Article 29(2) of the Patent Act.

Therefore, the patent according to the inventions 1 to 18 should be invalidated under Article 123(1)(ii) of the Patent Act.

(Reason 2)

The inventions 1 to 18 are not described in the detailed description of the specification attached to the application, and the Patent is for a patent application for which the description of the scope of claims does not comply with Article 36(6)(i) of the Patent Act.

Therefore, the patent according to the inventions 1 to 18 should be invalidated under Article 123(1)(iv) of the Patent Act.

[Means of proof]

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

Evidence A No. 2: National Publication of International Patent Application No.

2001-509746

Evidence A No. 3: National Publication of International Patent Application No. 2003-532563

Evidence A No. 4: Japanese Unexamined Patent Application Publication No. H10-337935

Evidence A No. 5: Japanese Unexamined Patent Application Publication No. 2001-101473

Evidence A No. 6: Japanese Unexamined Patent Application Publication No. S61-175552

2. The demandee's allegation brief

The demandee demands the trial decision that the demand for the invalidation trial of the case should not be approved and the costs in connection with the trial shall be borne by the demandant, alleges that none of the reasons for invalidation alleged by the demandant has reason, and submits Evidence B No. 1 as means of proof.

[Means of proof]

Evidence B No. 1: Written demand for appeal against the examiner's decision of refusal for Japanese Patent Application No. 2007-509002 (the application of the case)

No. 4 Matters described in respective items of Evidence A

(1) Evidence A No. 1

In the Evidence A No. 1 (Japanese Unexamined Patent Application Publication No. 2000-85095) which is a publication distributed before the date of priority claim of this patent application (referred to as "priority date for the invention" below), the drawings and the following matters are described.

A No. 1(A): "An inspection rotary press comprising:

an inspection unit configured to include a first inspecting cylinder which holds and conveys a sheet as winding it around a peripheral surface, a first inspection device which is provided opposed to the peripheral surface of the first inspecting cylinder and inspects the sheet conveyed by the first inspecting cylinder, a second inspection cylinder which is provided opposed to the first inspecting cylinder and conveys the sheet received from the first inspecting cylinder as winding it around the peripheral surface, and a second inspection device which is provided opposed to the peripheral surface of the second inspection cylinder and inspects the sheet conveyed by the

second inspection cylinder; and
a printing unit configured to print the sheet inspected by the inspection unit. ([claim 1])

A No. 1(B): "At the time of printing the valuable securities and the like, picture patterns are printed first, and then, seals and numbers are additionally printed. This kind of printed matters are made by printing the picture patterns on the sheet by using a printer for picture patterns and printing the seals and numbers to the sheet, which has passed the inspection whether the printed picture patterns are good or not, by the inspection rotary press after that. In this way, confusion in operation and generation of defective products are avoided." (paragraph [0002])

A No. 1(C): "The inspection rotary press which additionally prints the serial number and seal on the sheet where the picture patterns are printed is exemplified in the present embodiment. A paper tray 6 on which a large number of sheets to which a plurality of the picture patters is printed are mounted is provided in the paper feeding unit 1. The sheet 5 on the paper tray 6 is sucked by a sucker device which is not shown one by one and is fed on a feeder board 7. A swing device 8 feeds the sheet 5 to the inspection unit 2 via a transfer cylinder 9.

The inspection unit 2 includes a first inspecting cylinder 10 which holds and conveys the sheet 5 as winding it around the peripheral surface, a surface inspection camera 11, which is provided opposed to the peripheral surface of the peripheral surface and inspects the sheet 5 conveyed by the first inspecting cylinder 10, as a first inspection device, a second inspection cylinder 12 which is provided opposed to the first inspecting cylinder 10 and conveys the sheet 5 received from the first inspecting cylinder 10 as winding it around the peripheral surface, and a rear surface inspection camera 13 which is provided opposed to the peripheral surface of the second inspection cylinder 12 and inspects the sheet 5 conveyed by the second inspection cylinder 12 as a second inspection device.

The printing unit 3 includes a first impression cylinder 14 which is provided opposed to the second inspection cylinder 12 and conveys the sheet 5 received from the second inspection cylinder 12 as winding it around the peripheral surface and a stamping cylinder 15 which prints the seals relative to the sheet 5 conveyed by the first impression cylinder 14". (paragraphs [0016] to [0018])

A No. 1(D): "With this configuration, the surface of the sheet 5 fed from the paper

feeding unit 1 to the inspection unit 2 is inspected by the surface inspection camera 11 in the first inspecting cylinder 10, and after that, the sheet 5 is transferred to the second inspection cylinder 12. The rear surface of the sheet 5 is inspected by the rear surface inspection camera 13 there.

Next, the sheet 5 is directly transferred from the second inspection cylinder 12 to the first impression cylinder 14 of the printing unit 3". (paragraphs [0025] to [0026])

A No. 1(E): "The diameters of the first impression cylinder 14, the second impression cylinder 19, the first inspecting cylinder 10, and the second inspection cylinder 12 are respectively twice of the diameters of the first to fourth cylinders 16, 17, 20, and 21. Therefore, the quality of the print is certainly determined between a position where the sheet 5 passes through the position of the inspection by the rear surface inspection camera 13 and a position where the sheet 5 is printed by the stamping cylinder 15, and a malfunction of the device can be prevented." (paragraph [0034])

A No. 1(F): According to the description in A No. 1(D) such that "the surface of the sheet 5 is inspected by the surface inspection camera 11, and after that, the rear surface is inspected by the rear surface inspection camera 13" and the description in A No. 1(E) such that "the quality of the print is certainly determined between ... and the position where the sheet 5 is printed by the stamping cylinder 15", it is obvious that the "rotary press" in A No. 1(A) includes a determining unit to determine the quality of the print based on the inspections by the surface inspection camera 11 and the rear surface inspection camera 13.

A No. 1(G): In consideration of the description in A No. 1(C) such that "The inspection rotary press which additionally prints the serial number and seal on the sheet where the picture patterns are printed is exemplified in the present embodiment. A paper tray 6 on which a large number of sheets to which a plurality of the picture patters is printed are mounted is provided in the paper feeding unit 1. The sheet 5 on the paper tray 6 is sucked by a sucker device which is not shown one by one and is fed on a feeder board 7. A swing device 8 feeds the sheet 5 to the inspection unit 2 via a transfer cylinder 9" and the arrangement of the transfer cylinder 9 and the first inspecting cylinder 10 in FIG. 1, it can be said that the inspection rotary press includes the paper feeding unit 1 and the transfer cylinder 9 which successively transfers the sheets 5 to the first inspecting cylinder 10.

A No. 1(H): By referring to the description in A No. 1(C) such that "a second inspection cylinder 12 which is provided opposed to the first inspecting cylinder 10 and conveys the sheet 5 received from the first inspecting cylinder 10 as winding it around the peripheral surface" and "a first impression cylinder 14 which is provided opposed to the second inspection cylinder 12 and conveys the sheet 5 received from the second inspection cylinder 12 as winding it around the peripheral surface" and the arrangement of the cylinders including the transfer cylinder 9 and the first inspecting cylinder 10 in FIG. 1, it can be said that the transfer cylinder 9, the first inspecting cylinder 10, the second inspection cylinder 12, and the first impression cylinder 14 are provided opposed to each other.

As described above, the following invention (referred to as "Evidence A No. 1 invention" below) is described in the Evidence A No. 1.

"An inspection rotary press for a sheet 5 to which picture patterns such as valuable securities are printed, comprising:

a paper feeding unit 1;

a first inspecting cylinder 10 configured to convey the sheet 5;

a surface inspection camera 11 configured to inspect the sheet 5 conveyed by the first inspecting cylinder 10;

a second inspection cylinder 12 configured to be provided opposed to the first inspecting cylinder 10 and convey the sheet 5 received from the first inspecting cylinder 10;

a rear surface inspection camera 13 configured to inspect the sheet 5 conveyed by the second inspection cylinder 12;

a determining unit configured to determine a quality of the print based on inspections by the surface inspection camera 11 and the rear surface inspection camera 13;

a transfer cylinder 9 configured to continuously transfer the sheet 5 to the first inspecting cylinder 10; and

a first impression cylinder 14 configured to convey the sheet 5 received from the second inspection cylinder 12, wherein

the transfer cylinder 9, the first inspecting cylinder 10, the second inspection cylinder 12, and the first impression cylinder 14 are provided opposed to each other,

the printed sheet is fed from the transfer cylinder 9 to the first inspecting cylinder 10, transferred to the second inspection cylinder 12, transferred to the first

impression cylinder 14, and

a surface of the sheet 5 is inspected by the surface inspection camera 11 in the first inspecting cylinder 10, and after that the sheet 5 is transferred to the second inspection cylinder 12."

(2) Evidence A No. 2

In the Evidence A No. 2 (National Publication of International Patent Application No. 2001-509746) which is a publication distributed before priority date for the invention, the drawings and the following matters are described.

A No. 2(A): "A device configured of the imaging devices (34, 36) and at least a single drum (17, 18) for conveying a sheet (1) performs qualitative assessment of the processed sheet (1). The device has the drum including a first holding device (27) grips the beginning of the sheet (1). At least a single second holding device (28) for gripping the trailing end is provided in the drums (17, 18), and the holding device is arranged so as to stretch the sheet (1) tight before the inspection of the sheet (1)." (page 2, lines 2 to 9)

A No. 2(B): "Essentially, a device for the qualitative assessment of the processed sheets 1 has been installed in a sheet-processing machine. In the present preferred embodiment, a sheet-fed rotary printing press, which imprints sheets of paper 1 on their front and reverse sides is used. For reasons of simplification, only the sheet transport device downstream of the print units, as far as the deposit of the sheets on piles 4, 6, 7 in a delivery device 8, has been represented.

The processed sheets are understood to be, for example, sheets which have been printed, embossed or provided with a pattern in other ways." (page 6, lines 1 to 7)

A No. 2(C): "Each one of these two drums 17 and 18 has been assigned its own inspection device. Essentially this inspection device consists of an illumination device 32, 33 and an image recording device 34, 36. In the present preferred embodiment, a plurality of stroboscopic flashes 37 is provided as the illumination device 32, 33, which are arranged in such a way that an even illumination of the sheet to be inspected takes place. This means that an angle and a distance of the light outlet surface of the stroboscopic flashes 37 are matched to the peripheral surface of the drum 17, 18 and to the lens of the image recording device 34, 36.

The respective image recording device 34, 36 consists of at least one CCD area camera (Flaechenkamera), preferably of two CCD area cameras 34, 36, arranged next to each other in the axial direction of the drum 17, 18. Preferably, four individual recordings, corresponding to each quadrant, are taken of each sheet to be inspected, which are again superimposed on each other to form a whole image in an evaluation device connected downstream of the CCD area cameras 34, 36. This whole image is then evaluated, for example, in a method corresponding to the method described in DE4206366A1. Two successive images per sheet 1 to be inspected are recorded by each one of the two CCD area cameras 34, 36.

However, it is also possible to record a single image of the sheets by means of a single CCD area camera." (page 7, line 18 to page 8, line 7)

A No. 2(D): "The mode of operation of the device in accordance with the present invention is as follows:

The chain gripper devices 12 of the first chain conveyor 9 takes over the printed sheets from a compression cylinder (which is not shown). The inspection of the front 2 and reverse side 3 of the sheets only takes place after printing, i.e., following complete processing, as the last work step prior to deposition in the sheet processing machine. These chain gripper devices 12 convey the sheets 1 first in the horizontal, then in the vertical direction to the second chain conveyor 14 arranged above the piles 4, 6, 7, and transfer the sheets to the first drum 17. In the process, the grippers 27 of the first drum 17 grip the beginning of the sheet to be inspected. After approximately one-half rotation of the drum 17, the end of each sheet 1 reaches the area of the suction devices 28, which are thereupon charged with suction air and in this way grasp the end of the sheets 1. Subsequently, the suction devices 28 perform a movement both in the circumferential direction and the axial direction of the drum 17 and in this manner tightly stretch the sheet. Now the sheet 1 lies, free of creases, on the first drum 17. In the present example, the reverse side 3 of the sheet faces away from the drum 17 and points in the direction toward the CCD area cameras 34. Now the stroboscopic flashes 37 illuminate the sheet for the first time, and the two CCD area cameras 34 record the two adjoining individual images of the forward half of the sheet. The sheet 1 is stretched tight before the first single image is recorded. After a rotation of the drum 17 corresponding to one-half length of the sheet, the two successive individual images of the rear half of the sheet are recorded. Only after all individual images, or respectively the total image, of the sheet has been recorded, the sheet is then transferred to the second drum 18 for inspecting the front

side 2 of the sheet. The grippers 27 of the first drum 17 transfer the beginning of the sheet 1 to the grippers 27 of the second drum 18. In this way the sheet is conveyed by the second drum 18 and the reverse side 3 of the sheet, which faced to the outside on the first drum 17, moves inward to overlie the surface 31 of the second drum 18, so that the front side 2 of the sheet now faces to the outside. As soon as the suction devices 28 of the first drum 17 and the second drum 18 come into the transfer area (i.e., into the area of the common centers of the two drums 17, 18), the suction air for the suction devices 28 of the first drum 17 is turned off and the suction devices 28 of the second drum 18 are charged with suction air. By means of this, the end of the sheet is grasped by the suction devices 28 of the second drum 18. Subsequently, the suction devices 28 of the second drum 18 are moved in the circumferential direction and in the axial direction of the second drum 18. Here, the suction force generated by the suction devices 28 on the end of the sheet is designed to be such that, although the sheet is stretched tightly, the sheet begins to slide on the suction devices 28 before the tear resistance of the sheet is overcome.

Only after the sheet 1 has been completely stretched tight on the second drum 18, are individual images of the forward half of the front side 2 of the sheet recorded. Thereafter, the two individual images of the rear half of the sheet are recorded. Here, too, the beginning of the sheet is only transferred to the chain gripper devices 21 of the third chain conveyor 19 after the entire image of the sheet has been completely recorded." (page 8, line 13 to page 9, 6 lines from the bottom)

As described above, the following invention (referred to as "Evidence A No. 2 invention") is described in the Evidence A No. 2.

"A device for the qualitative assessment of the printed sheet 1, comprising:

an inspection device configured to include a drum 17 for conveying the printed sheet 1, an illumination device 32 and a CCD area camera 34 for taking images of the sheet 1 on the drum 17; and

an inspection device configured to include a drum 18 for conveying the printed sheet 1, an illumination device 33 and a CCD area camera 36 for taking images of the sheet 1 on the drum 18, wherein

only after all individual images, or respectively the total image of the reverse side 3 of the sheet 1 on the drum 17 has been recorded, the sheet 1 is then transferred to the second drum 18 for inspecting the front side 2 of the sheet 1, and the beginning of the sheet 1 is only transferred to the chain gripper devices 21 of the third chain conveyor 19 after the entire image of the sheet 1 on the drum 18 has been completely

recorded."

(3) Evidence A No. 3

In the Evidence A No. 3 (National Publication of International Patent Application No. 2003-532563) which is a publication distributed before priority date for the invention, the drawings and the following matters are described.

A No. 3(A): "The present invention relates to an installation for treating sheets of paper printed on both sides, especially papers of value, comprising a sheet-by-sheet feed device, transfer means, means for treating said sheets, and means for separation into at least two separate stacks, and to a method for operating this installation.

Installations for printing papers of value, such as checks, security papers and bank notes, are becoming increasingly sophisticated in order to prevent forgeries that are becoming easier to produce using the improved reproduction means currently available." (paragraphs [0001]-[0002])

A No. 3(B): "The installation of the present invention is characterized in that it comprises means for checking the printing quality, means for printing a sequential number and/or additional elements, means for checking the numbering and/or for printing additional elements, and means for marking the sheets found to be unacceptable by one of the quality checking means.

This installation has the advantage of making it possible, in a single pass, to carry out the operations of checking quality, of printing a sequential number and/or additional elements, of checking the quality of this printing, and of marking the sheets found to be unacceptable and of guiding them toward a suitable stack." (paragraphs [0007] and [0008])

A No. 3(C): "The installation shown in FIG. 1 firstly comprises a feed device 1 for feeding printed sheets S of paper, for example papers of value such as bank notes. These sheets S enter a transfer drum 3 via a feed roll 2 and are taken up by a first drum 4 driven in rotation in the direction of the arrow F1. The first drum 4 is provided with grippers for seizing the front end of a sheet. The drum 4 is apertured so that it is possible to carry out the various quality checks. This is because it is necessary to be able to see the surface of the seized sheet from inside the drum 4. In a first position inside the drum 4 we have a camera 5 which makes it possible to check by transmission, and facing this camera outside the drum there is a device 6 for

illuminating the sheet on its opposite side relative to the sheet. Thereafter, the sheet continues its travel in the direction of the arrow F1 and arrives so as to face an optoelectronic reflection-based checking device 7 illuminated by devices 8, the sheet being held in a regular configuration by a suction device 9. In the present case, the quality check is made row by row as the drum 4 rotates past the quality checking device 7. Thereafter, when the sheet arrives at the point of contact between the drum 4 and a drum 10, the sheet is taken by a seizing device to the drum 10, and goes past another optoelectronic reflection-based checking device 7', the sheet being illuminated by an illumination device 8', and row-by-row quality check is also carried out as before, the sheet being held in a regular manner by a suction device 9'. Of course, the drum 10' rotates in the direction of the arrow F2, which is the opposite direction to that of the arrow F1, thereby making it possible, as the sheet S passes from the drum 4 to the drum 10, to change the side of the sheet that is turned toward the inside of the drum 10. The drum 10 has a construction very similar to that of the drum 4. Thereafter, the sheet passes via a series of transfer rolls 11, and a printing roll 12 on which two elements 13 and 14 act, for numbering or for affixing alphabetical elements. Each of the printing elements 13 and 14 is inked by an inking assembly which does not form part of the present invention. The rolls 13 and 14 are also provided with a cleaning device, as is standard practice in this type of installation." (paragraph [0023])

A No. 3(D): "After the sheets have been numbered, they run past an optoelectronic device 17 for checking the printing quality of the numbering. Next, the sheet S is taken up by a chain transfer device 18 and the sheet runs past a marking device 19. This device 19 applies a mark to the upper part of the sheets that have been found to be defective, either during quality check of the printing by reflection or transmission, or by the device for checking the printing quality of the numbering. A device 20 checks whether the sheets regarded as being unacceptable have indeed been marked by the device 19 and thereafter the sheets are directed toward a stacking device. The stacking device has a first stack 21 for the sheets regarded as being good, a stack for the sheets regarded as being scrap and finally it may have a third stack 23 which either it also contains sheets regarded as being good, or they may contain sheets that have not been checked or numbered following inopportune stoppages of the installation or errors during the treatment and that these sheets must pass through the installation one more time." (paragraph [0026])

A No. 3(E): "The installation described in FIG. 1 is in its most complete form and it makes it possible, from a stack of sheets S, to carry out firstly a check of the printing quality by reflection and by transmission, followed by complementary printing, for example, by means of the assembly 15, the affixing of a signature or a date, or both, followed by numbering, thereafter a check of the printing quality, transfer past a device affixing a mark on the sheets having a defect, and then a stacking device for separating the acceptable sheets from those that are not and optionally from those that have not been treated, whether not checked or not numbered." (paragraph [0031])

According to the above, the following invention (referred to as "Evidence A No. 3 invention") is described in the Evidence A No. 3.

"A method for operating a device for treating a printed sheet, for example, papers of value such as bank notes, wherein

a feed device 1 for successively feeding the sheets of paper is included, and these sheets enter a transfer drum 3 via a feed roll 2 and are taken up by a drum 4 driven in rotation in the direction of the arrow F1,

in a first position inside the drum 4 we have a camera 5 which makes it possible to check by transmission, and facing this camera 5 outside the drum 4 there is a device 6 for illuminating the sheet on its opposite side relative to the sheet, the sheet continues its travel and arrives so as to face an optoelectronic reflection-based checking device 7 illuminated by devices 8, and the quality check is made as the first drum 4 rotates past the quality checking device 7,

thereafter, when the sheet arrives at the point of contact between the drum 4 and a drum 10, the sheet is taken by a seizing device to the drum 10, and goes past another optoelectronic reflection-based checking device 7', the sheet being illuminated by an illumination device 8', and the quality check is also carried out,

next, the sheet is taken up by a chain transfer device 18 and the sheet runs past a marking device 19, and this device 19 applies a mark to the sheets that have been found to be defective during quality check of the printing by reflection or transmission, and

after that, sheets are directed toward a stacking device, and the acceptable sheets are separated from those that are not."

(4) Evidence A No. 4

In the Evidence A No. 4 (Japanese Unexamined Patent Application Publication No. H10-337935) which is a publication distributed before priority date for the

invention, the drawings and the following matters are described.

A No. 4(A): "A checking device for checking a printed matter by using infrared ray absorbing ink, comprising;
a printing press for printing a printed matter with an infrared ray ink of which spectrum characteristics in an infrared region is different from spectrum characteristics under white light, said printing press, including infrared ray irradiating means for irradiating infrared ray towards said conveyed printed matter, image data pick up means for obtaining data of an image of the printed matter irradiated by the infrared ray, memory means for previously memorizing data of an image of a standard printed matter, printed with the infrared ink, as a standard value by irradiating the infrared ray, and judgement means for reading the image of the standard value stored in the memory means, comparing the standard image with the image obtained by the image data pick up means, and judging whether a result of the comparison is within a predetermined range." ([claim 1])

A No. 4(B): "One embodiment of a device for detecting a matter printed with infrared ray ink according to the present invention is shown in FIG. 1 and FIG. 2. In the embodiment, as shown in the drawings, an intaglio printing press comprises a plurality of contact type line sensors 3, and the printer press is connected to a signal processing device 12 and a personal computer 11 in order to detect a security sheet 14 on line. In the embodiment, the printed security sheet 14 has contact with the impression cylinder 13 which rotates at a constant speed and is conveyed, and there are three lines of security note sections (herein after, it is referred as "detected object") of the security sheet 14 arranged along a transverse direction with respect to a rotational direction of the impression cylinder 13.

Corresponding to each line of detected objects on the security sheet 14, a contact type line sensor 3 is provided. Each line sensor 13 is connected to the signal-processing device 12. As described above, the contact type line sensor 3 comprises an infrared ray LED array, an optional element for forming an image, a photodiode array, and a picture signal control IC, detects an infrared ray image of the detected object and outputs signals in proportion to variable density of the image along time series." (paragraphs [0020] and [0021])

A No. 4(C): "A rotary encoder 1 is a device that outputs pulses illustrated in FIG. 6(a) every time the impression cylinder 13 rotates at a fixed angle regardless of time, and

by utilizing the pulse, as illustrated in FIGS. 6(c)-(e), scan of each line sensor 3 and operation start of an A/D converter 9 or the like are controlled. FIG. 6(b) shows a reference clock. A photoelectric switch 2 is a device that outputs signals illustrated in FIG. 6(f) when the inspection object enters each line sensor 3, and by the signal, as illustrated in FIG. 6(g), image signals are A/D converted and preserved in an image memory 10." (paragraph [0023])

A No. 4(D): "Upon an inspection, a light quantity of an infrared LED in each line sensor 3 is set, the sheet 14 such as the bank note is supplied for printing, printing is performed during conveyance in the impression cylinder 13, and when the printed sheet 14 such as the bank note is closely attached to the impression cylinder and conveyed as it is, the image of each inspection object is fetched by each line sensor 3. Note that detection by each line sensor 13 may be performed not only on the impression cylinder but also on the cylinder after printing and before discharge or during conveyance by chain grippers." (paragraph [0028])

According to the above, the following invention (referred to as "Evidence A No. 4 invention") is described in the Evidence A No. 4.

"An infrared ray printed matter checking device in which a light quantity of the infrared LED of each line sensor 3 is determined in the detecting process, the security sheet 14 is supplied for printing. When the sheet 14 is printed during conveyance by the impression cylinder 13 and continuously conveyed as having contact with the impression cylinder, an image of the detected object of the printed sheet 14 is taken by the each line sensor 3 whose operation start is controlled by a rotary encoder 1."

(5) Evidence A No. 5

In the Evidence A No. 5 (Japanese Unexamined Patent Application Publication No. 2001-101473) which is a publication distributed before priority date for the invention, the drawings and the following matters are described.

A No. 5(A): "A paper sheet discriminating apparatus for discriminating a paper sheet in terms of its pattern by irradiating said paper sheet with a light to receive at least the reflected one of a transmitted light and a reflected light obtained from said paper sheet" (paragraph [0009])

A No. 5(B): "FIG. 1 is a block diagram showing an example of the construction of an

essential portion of a paper sheet (as will be exemplified by a "bill") discriminating apparatus according to the present invention. In FIG. 1, an optical sensor unit 10 is constructed to array a number of detectors at predetermined positions over a not-shown bill transfer passage an in line with the transfer direction of a bill 1 and to include an image line sensor made of an LED array and a photodiode array. The optical sensor unit 10 scans the bill 1 as being transferred, in a planar shape to detect the distribution of physical properties of a reflected light or a transmitted light at the individual positions over the bill 1." (paragraph [0013])

A No. 5(C): "FIG. 2 shows an example of the construction of a transmission/reflection type line sensor 100 having a multiple wavelength light source. The line sensor 100 is constructed to include a light emitting unit 110 and a light receiving/emitting unit 120 which are formed into rectangular shapes confronting each other, and the bill is transferred as a medium to be discriminated, in a bill passage between the light emitting unit 110 and the light receiving/emitting unit 120." (paragraph [0020])

According to the above, the following invention (referred to as "Evidence A No. 5 invention") is described in the Evidence A No. 5.

"A paper sheet discriminating apparatus for discriminating a paper sheet in terms of its pattern by irradiating said paper sheet with a light to receive at least the reflected one of a transmitted light and a reflected light obtained from said paper sheet. In the paper sheet discriminating apparatus, the bill is transferred in a bill passage between the light emitting unit 110 and the light receiving/emitting unit 120 of the image line sensor 100".

(6) Evidence A No. 6

In the Evidence A No. 6 (Japanese Unexamined Patent Application Publication No. S61-175552) which is a publication distributed before priority date for the invention, the drawings and the following matters are described.

A No. 6(A): "In a method for detecting a defect on/in a sheet by optically and electrically detecting a light quantity change by reflecting the light by the sheet or passing the light through the sheet, a defect caused by a bug is discriminated by calculating an electric signal level value obtained as a reflection-type light quantity change relative to the same defect and an electric signal level value obtained as a

transmission-type light quantity change." (page 1, lines 4 to 11 in lower left column)

A No. 6(B): "FIG. 2 illustrates a case where the method according to the present invention is applied to a double-side check of a flat sheet (1).

The device mainly includes a supply unit (19), a detection unit (20), and a discharge unit (21).

As the supply unit, known methods such as a method for transferring the flat sheet by using a gripper chain with a predetermined pass and a method for transferring the flat sheet as sandwiching it between sheet feeding conveyors provided at upper and lower parts can be employed. However, also, a high-speed operation can be performed by employing a sheet-by-sheet feeder of a sheet printing press.

In the detection unit (20), which is a main part of the present invention, a roll with a swing gripper (22), a first inspection roll (23), a second inspection roll (24), and a third inspection roll (25) are arranged in an approximately horizontal state as the sides of each component have contact with each other. In each inspection roll, a gripper device, which is not shown, used by an impression cylinder of the printer and the like is provided so as to grip the top end of the transferred flat sheet and to transfer the sheet to the next process.

A reflection-type defect detecting device (2) for checking the upper surface of the sheet is provided above the first inspection roll (23), and a reflection-type defect detecting device (5) is for checking the lower surface of the sheet is provided below the second inspection roll (24). The third inspection roll (25) uses a transparent/semi-transparent hollow pipe made of the acrylic resin to check the flat sheet with the transmitted light. A light projector (9) is provided in the third inspection roll (25) and a light receiver (10) is provided and embedded above the same so that the third inspection roll (25) is configured to act as a transmission-type defect detecting device (8)." (page 3, line 7 in lower left column to line 15 in lower right column)

A No. 6(C): "By using a defect detecting device according to the method of the present invention, a defect caused by a bug can be very easily and accurately discriminated. Therefore, processing ability is significantly increased, and in addition, a cost required at the time of receiving a claim can be reduced, and a burden of a worker can be largely reduced." (page 5, five lines from the bottom of upper left column to line 1 in upper right column)

According to the above, the following invention (referred to as "Evidence A No. 6 invention") is described in the Evidence A No. 6.

"Regarding a defect detecting device for detecting a defect on/in a sheet by optically and electrically detecting a light quantity change by reflecting the light by the sheet or passing the light through the sheet, the defect detecting device includes a supply unit (19), a detection unit (20), and a discharge unit (21). In the detection unit (20), a reflection-type defect detecting device (2) for checking the upper surface of the sheet is provided above the first inspection roll (23), and a reflection-type defect detecting device (5) is for checking the lower surface of the sheet is provided below the second inspection roll (24). The third inspection roll (25) uses a transparent/semi-transparent hollow pipe made of the acrylic resin to check the flat sheet with the transmitted light. A light projector (9) is provided in the third inspection roll (25) and a light receiver (10) is provided and embedded above the same so that the third inspection roll (25) is configured to act as a transmission-type defect detecting device (8). Accordingly, the defect caused by the bug can be discriminated."

No. 5 Judgement on the body 1 (regarding Reason 2 for invalidation)

Prior to examination of Reason 1 for invalidation, Reason 2 for invalidation will be examined.

1. The demandant's allegation

The demandant generally alleges about the Reason 2 for invalidation as follows.

(A) page 28 in written demand for trial

To take away the sheets from a cylinder only when the inspection is terminated is important features of the Invention 1 and the Invention 13.

(B) pages 28 and 29 in written demand for trial

In paragraph [0021] of the patent specification, the description has been made that "the transport length of the printed sheet on the inspection cylinders between the input location and the output location is selected to be slightly greater than the length of the printed sheet to be inspected". However, as illustrated in FIG. 1 of the drawings attached to the application (referred to as "Patent drawings" below), a second inspection device 10 and a third inspection device 16 are close to the output location on the cylinder. Therefore, the second inspection device 10 and the third inspection device 16 start to transfer the sheet to the next cylinder before the inspection is completed. When the camera is a linear camera, a distance between the

linear camera and the output location of the sheet has to be equal to or longer than the length of the sheet. When the sheet transport length is slightly longer than the length of the sheet, the inspection cannot be completed before the sheet is taken away from the inspection cylinder.

(C) page 18 in oral proceedings statement brief

Also, in FIG. 1 of the Patent drawings, positions on the inspection cylinder where a first camera 6, a second camera 9, and a third camera 14 are faced to are respectively apart from the input location of the sheet at about 40°, 53°, and 65° as an angle. Therefore, the first camera 6, the second camera 9, and the third camera 14 are not arranged so as to take images immediately after the input location of the sheet.

(D) page 29 in written demand for trial

Accordingly the Invention 1 and the Inventions 2 to 12 depending on the Invention 1 and the Invention 13 and the Inventions 14 to 18 depending on the Invention 13 are not described in the detailed description of the invention of the patent specification.

2. Described matters in the Specification of the case

In the Specification of the case, the following matters are described.

Described matter A:

"An aim of the present invention is to improve the known inspection machine and process.

In particular, an aim of the present invention is to optimize the transport and inspection times required for performing inspection of printed sheets.

Another aim of the present invention is to make it possible to build an inspection machine with a compact configuration.

A further aim of the present invention is to provide an easy and reliable inspection machine and process." (paragraphs [0006] to [0009])

Described matter B:

"The second inspection unit may comprise, in addition, second additional inspection devices referenced 10 and 11 in FIG. 1 to inspect and check the presence of features, which are not visible such as IR, UV, magnetic features etc. on the sheets. These devices thus may include appropriate lamps (UV) and detectors (IR, magnetic) to carry out the additional inspection." (paragraph [0016])

Described matter C:

"The third inspection unit may comprise, in addition and similarly to the second inspection unit described above, third additional inspection devices referenced 15 and 16 in FIG. 1 to inspect and check the presence of features, which are not visible such as IR, UV, magnetic features etc. on the sheets. Accordingly, these additional devices may include appropriate lamps (UV) and detectors (IR, magnetic) to carry out the additional inspection." (paragraph [0018])

Described matter D:

"Preferably, the cameras used are linear CCD cameras that take successive linear images of the sheet being inspected. Therefore, in order to be able to take proper image of the entire sheet being inspected, they are synchronized with the sheet transport on the cylinders 4, 7, and 12 through an encoder of the cylinders. In order to have a perfect match between the encoder reading of each cylinder 4, 7, and 12 and camera image taking, the sheet must be completely inspected before they are transferred to the next inspection cylinder. The relative positions of the cylinders must be such that this condition of complete inspection before transfer is maintained. In this case, the sheets can be properly inspected and the transfer operation from one cylinder to another does not influence the inspection operation per se." (paragraph [0020])

Described matter E:

"Preferably, the transfer and inspection cylinders 3, 4, 7, 12, and 17 are arranged in a zigzag manner, as shown in FIG. 1, such that a transport length of a printed sheet on each inspection cylinder, between an input location where a printed sheet is transferred onto the inspection cylinder (that is, a supply place) and an output location where the printed sheet is transferred away from the inspection cylinder (that is, a collection place) is optimized for a predetermined sheet length. In particular, the transport length of the printed sheet on the inspection cylinder between the input and output locations is selected to be slightly greater than the length of the printed sheet to be inspected. It will be understood that this configuration allows to reduce to minimum the overall transport path of the sheets through the inspection unit, thereby minimizing the transport and inspection times of the sheets. Indeed, with the machine configuration illustrated in FIG. 1, the transport length between the input location on the first inspection cylinder 4 and the output location of the third inspection cylinder 12 is slightly greater than three times the length of the inspected sheets. Combined with cylinders of minimal size, this further allows to build a

machine with a very compact configuration." (paragraph [0021])

Described matter F:

"Preferably, the transfer and inspection cylinders are carrying only one set of grippers each, and each cylinder is this to transport one sheet at a time. Also, the diameter of the cylinders is minimized for minimal transport and inspection time while maintaining the predetermined transfer conditions only once the inspection is finished." (paragraph [0023])

Described matter G:

"FIG. 1 shows an embodiment of the inspection machine according to the invention." (Brief Description of Figures)

3. Regarding the Invention

(1) Regarding the Invention 1

When especially referring to the descriptions such that "An aim of the present invention is to provide a simple and reliable inspection machine and process." in the described matter A and "The relative position of the cylinders must be such that this condition of complete inspection before transfer is maintained. In this case, the sheets can be properly inspected and the transfer operation from one cylinder to another does not influence the inspection operation per se." in the described matter D in association with "To take away the sheets only when the inspection is terminated" which is the important features of the Invention 1 according to the demandant, the Invention 1 includes "to provide" "a simple and reliable inspection machine" and "the sheets can be properly inspected and the transfer operation from one cylinder to another does not influence the inspection operation per se." as one of the technical challenges.

Also, in the detailed description of the invention of the Specification of the case, it has been indicated that the technical challenge can be solved by "completely inspecting the sheets before they are transferred to the next inspection cylinder" and "having the relative position of the cylinders such that this condition of complete inspection before transfer is maintained" (described matter D).

On the other hand, a person skilled in the art who contacts the description in Claim 1 of the case can read the following matter from the description in Claim 1 of the case. The matter includes that "the inspection machine" of the Invention 1 is configured so that "the first to third sheet inspection units, the input transfer cylinder

(3), and the output transfer cylinder (17) are arranged in such a manner that the inspected printed sheet is taken away from the first, second, or third inspection cylinder (4, 7, 12) only once the inspection of the printed sheet is completed by the first, second, or third inspection unit", and accordingly, ""the sheets can be properly inspected and the transfer operation from one cylinder to another does not influence the inspection operation per se".

The description in Claim 1 of the case "the first to third sheet inspection units, the input transfer cylinder (3), and the output transfer cylinder (17) are arranged in such a manner that the inspected printed sheet is taken away from the first, second, or third inspection cylinder (4, 7, 12) only once the inspection of the printed sheet is completed by the first, second, or third inspection unit" substantially corresponds to "the sheet must be completely inspected before they are transferred to the next inspection cylinder" and "the relative position of the cylinders must be such that this condition of complete inspection before transfer is maintained" in the described matter D.

Therefore, the invention in which "the first to third sheet inspection units, the input transfer cylinder (3), and the output transfer cylinder (17) are arranged in such a manner that the inspected printed sheet is taken away from the first, second, or third inspection cylinder (4, 7, 12) only once the inspection of the printed sheet is completed by the first, second, or third inspection unit" described in Claim 1 of the case is the invention described in the detailed description of the invention and does not exceed the scope which is described so that a person skilled in the art can recognize that the problem of the invention can be solved in the detailed description of the invention.

Subsequently, (B) and (C) of the demandant's allegation will be mentioned.

Generally, in consideration of that the drawings attached to the application are not always illustrated with accuracy required for design drawings, it can be understood that "an embodiment of the inspection machine according to the invention" (described matter G) is schematically illustrated in FIG. 1 of the Patent drawings.

Even when there is no specific description by using values and the like to strictly specify arrangement positions of the linear CCD camera (6, 9, 14), the second inspection device (10, 11), and the third inspection device (15, 16) in each inspection cylinder in the Claims and the Specification of the case, a person skilled in the art can normally understand that it is preferable that each camera and each inspection device

be arranged at appropriate positions between the input location and the output location in a range for satisfying a condition such that "the sheet must be completely inspected before they are transferred to the next inspection cylinder" (described matter D) when the linear CCD cameras (6, 9, 14), the second inspection devices (10, 11), and the third inspection devices (15, 16) are arranged relative to each inspection cylinder (4, 7, 12) by totally considering the Patent drawings and the contents of the described matters D to F of the Specification of the case.

Therefore, regarding the input and output locations of each inspection cylinder and the arrangement positions of the cameras (6, 9, 14), the second inspection devices (10, 11), and the third inspection devices (15, 16), a distance and an angle between the positions of the respective components are measured in FIG. 1 in the Patent drawings which is a schematic diagram. Even when the actual measurement values above are the values indicating that "the inspection cannot be completed before the sheet is took away from the inspection cylinder", this does not mean that the Invention 1 is the invention such that "the inspection cannot be completed before the sheet is took away from the inspection cylinder" and that the invention 1 exceeds the scope which is described so that a person skilled in the art can recognize that the problem of the invention can be solved in the detailed description of the invention.

Therefore, the allegation of the demandant cannot be accepted.

As described above, the Invention 1 is the invention described in the detailed description of the invention of the Specification of the case, and the patent according to the Invention 1 is not granted for a patent application which does not meet the requirement stipulated in Article 36(6)(i) of the Patent Act. Accordingly, the Reason 2 for invalidation for the patent according to the Invention 1 has no reasons.

(2) Regarding the Inventions 2 to 12

The Inventions 2 to 12 correspond to the invention including all the specified matters of the invention of the Invention 1 and having other specified matters of the invention added thereto.

The specified matters of the invention added to the Inventions 2 to 12 are described in the Specification of the case. In addition, the descriptions in Claims 2 to 12 of the case do not exceed the scope described so that a person skilled in the art can recognize that the problems of the invention can be solved by adding the specified matters of the invention to the Invention 1.

Therefore, the Inventions 2 to 12 are described in the detailed description of the

invention of the Specification of the case based on the reason similar to that of the Invention 1, and the patent according to the Inventions 2 to 12 is not granted for a patent application which does not meet the requirement stipulated in Article 36(6)(i) of the Patent Act. Accordingly, the Reason 2 for invalidation for the patent according to the Inventions 2 to 12 has no reasons.

(3) Regarding the Invention 13

When particularly referring to the descriptions in the described matters A and D in association with "to take out the sheet from the cylinder only when the inspection is competed" which is assumed as the important features of the Invention 13 by the demandant, the Invention 13 includes "to provide an easy and reliable inspection machine and process" and that "the sheets can be properly inspected and the transfer operation from one cylinder to another does not influence the inspection operation per se" as one of the technical challenges. Also, in the detailed description of the invention of the Specification of the case, it is described that the technical challenge can be solved by "completely inspecting the sheet before it is transferred to the next inspection cylinder" and "arranging the relative position of the cylinders such that this condition of complete inspection before transfer is maintained" (described matter D).

On the other hand, a person skilled in the art having contact with the description in Claim 13 of the case can read the following matter from the description in Claim 13 of the case. "The inspection process" of the Invention 13 includes the specified matters of the invention such that "once the first inspection by the first linear camera is terminated, the printed sheets are transferred to the second inspection unit", "once the second inspection by the second linear camera is terminated, the printed sheets are transferred to the third inspection unit", "once the third inspection by the third linear camera is terminated, the printed sheets are transferred to the marking unit", and "transfers of the printed sheets from the first inspection unit to the second inspection unit and from the second inspection unit to the third inspection unit are made directly from the first inspection cylinder (4) to the second inspection cylinder (7) and from the second inspection cylinder (7) to the second inspection cylinder (7)". Accordingly, regarding the inspection by using at least the first to third linear cameras, the technical challenge such that "the sheets can be properly inspected and the transfer operation from one cylinder to another does not influence the inspection operation per se" can be solved.

The matter described in Claim 13 of the case such that "once the first

inspection by the first linear camera is terminated, the printed sheets are transferred to the second inspection unit", "once the second inspection by the second linear camera is terminated, the printed sheets are transferred to the third inspection unit", "once the third inspection by the third linear camera is terminated, the printed sheets are transferred to the marking unit", and "transfers of the printed sheets from the first inspection unit to the second inspection unit and from the second inspection unit to the third inspection unit are made directly from the first inspection cylinder (4) to the second inspection cylinder (7) and from the second inspection cylinder (7) to the third inspection cylinder (12)" substantially correspond to the description in the described matter D such that "the sheet must be completely inspected before they are transferred to the next inspection cylinder", and "the relative position of the cylinders must be such that this condition of complete inspection before transfer is maintained".

Therefore, the invention described in Claim 13 of the case such that "once the first inspection by the first linear camera is terminated, the printed sheets are transferred to the second inspection unit", "once the second inspection by the second linear camera is terminated, the printed sheets are transferred to the third inspection unit", "once the third inspection by the third linear camera is terminated, the printed sheets are transferred to the marking unit", and "transfers of the printed sheets from the first inspection unit to the second inspection unit and from the second inspection unit to the third inspection unit are made directly from the first inspection cylinder (4) to the second inspection cylinder (7) and from the second inspection cylinder (7) to the third inspection cylinder (12)" is the invention described in the detailed description of the invention and does not exceed the scope described so that a person skilled in the art can recognize that the problems of the invention can be solved in the detailed description of the invention.

Also, the allegations of the demandant (B) and (C) regarding the Invention 13 cannot be accepted according to the reason similar to that described in "3. Regarding Invention 1".

Therefore, the Invention 13 is the invention described in the detailed description of the invention of the Specification of the case, and the patent according to the Invention 13 is not granted for a patent application which does not meet the requirement stipulated in Article 36(6)(i) of the Patent Act. Accordingly, the Reason 2 for invalidation for the patent according to the Invention 13 has no reasons.

(4) Regarding the Inventions 14 to 18

The Inventions 14 to 18 correspond to the invention including all the specified

matters of the Invention 13 and having other specified matters of the invention added thereto.

The specified matters of the invention added to the Inventions 14 to 18 are described in the Specification of the case. In addition, the descriptions in Claims 14 to 18 of the case do not exceed the scope described so that a person skilled in the art can recognize that the problems of the invention can be solved by adding the specified matters of the invention to the Invention 13.

Therefore, the Inventions 14 to 18 are the invention described in the detailed description of the invention of the Specification of the case based on the reason similar to that of the Invention 13, and the patent according to the Inventions 14 to 18 is not granted for a patent application which does not meet the requirement stipulated in Article 36(6)(i) of the Patent Act. Accordingly, the Reason 2 for invalidation for the patent according to the Inventions 14 to 18 has no reasons.

No. 6 Judgement on the body 2 (regarding Reason 1 for invalidation)

1. Regarding the Invention 1

1-1 Comparison

The Invention 1 and the Evidence A No. 1 invention are compared.

(A) "A sheet 5 to which picture patterns are printed such as valuable securities" in the Evidence A No. 1 invention corresponds to "a printed matter in the form of printed sheets, such as valuable securities, paper money, bank notes, a passport, and other similar paper" in the Invention 1 from the point of view of meaning of the words, function, or the structure. Similarly, "paper feeding unit 1" corresponds to "sheet feeder (1)", "the sheet 5" corresponds to "the printed sheet". "The determining unit to determine a quality of the print based on inspections by the camera 11 for the surface inspection and the rear surface inspection camera 13" corresponds to "analyzing device", and "transfer cylinder 9" corresponds to "input transfer cylinder (3)".

(B) Since "the surface of the sheet 5 is inspected by the surface inspection camera 11 in the first inspecting cylinder 10" in the Evidence A No. 1 invention, "inspection rotary press" in the Evidence A No. 1 invention corresponds to "inspection machine" in the Invention 1. Also, "inspection rotary press for a sheet 5 to which picture patterns such as valuable securities are printed" in the Evidence A No. 1 invention corresponds to "inspection machine for a printed matter in the form of printed sheets, such as valuable securities, paper money, bank notes, a passport, and other similar

paper" in the Invention 1.

(C) "The first inspecting cylinder 10" and "the surface inspection camera 11" in the Evidence A No. 1 invention configure a single sheet inspection unit, and similarly, "the second inspection cylinder 12" and "the rear surface inspection camera 13" configure another sheet inspection unit. Also, the Evidence A No. 1 invention includes "determining unit to determine a quality of the print based on inspections by the surface inspection camera 11 and the rear surface inspection camera 13". Therefore, it is obvious that "the surface inspection camera 11 and the rear surface inspection camera 13" are communicably connected to "the determining unit".

In addition, all "the first inspecting cylinder 10" and "the second inspection cylinder 12" in the Evidence A No. 1 invention and "the first inspection cylinder (4)", "the second inspection cylinder (7)" and "the third inspection cylinder (12)" in the Invention 1 are "inspection cylinders". All of "the surface inspection camera 11" and "the rear surface inspection camera 13" in the Evidence A No. 1 invention and "the first linear camera (6)", "the second linear camera (9)", and "the third linear camera (14)" in the Invention 1 are "cameras".

Accordingly, regarding "a first inspecting cylinder 10 for conveying the sheet 5, a surface inspection camera 11 for inspecting the sheet 5 conveyed by the first inspecting cylinder 10, a second inspection cylinder 12 for being provided opposed to the first inspecting cylinder 10 and convey the sheet 5 received from the first inspecting cylinder 10, a rear surface inspection camera 13 for inspecting the sheet 5 conveyed by the second inspection cylinder 12, and a determining unit for determining a quality of the print based on inspections by the surface inspection camera 11 and the rear surface inspection camera 13" in the Evidence A No. 1 invention and

"a first sheet inspection unit with a first inspection cylinder (4) for transporting a printed sheet during inspection, a 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, a second illumination means (8) and a second linear camera (9) connected to an 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, a third illumination means (13) and a third linear camera (14) connected to an analyzing device for taking an image of the printed sheet while it is transported on the third inspection cylinder (12)" in the Invention 1, the Evidence A No. 1 invention and the Invention 1 have a common point such that "both of them include a plurality of pairs of sheet inspection units including an inspection cylinder to transport the sheet printed at the time of inspection and a camera connected to the analyzing device for taking images of the printed sheet during the transport on the inspection cylinder.

(D) "A delivery cylinder 9 for continuously carrying the sheet 5 to the first inspection cylinder 10" in the Evidence A No. 1 invention and "an input transfer cylinder (3) for successively transporting the printed sheets to the first inspection unit" in the Invention 1 are in common at the point of "an input transfer cylinder (3) for successively transporting the printed sheets to the most upstream sheet inspection unit", and similarly, "a first impression cylinder 14 that conveys the sheet 5 received from the second inspection cylinder 12" in the Evidence A No. 1 invention and "an output transfer cylinder (17) for taking out the printed sheets from the third inspection unit" in the Invention 1 are in common at the point of "a transfer cylinder for taking out the printed sheets from the most downstream sheet inspection unit".

Also, for the arrangement of "the delivery cylinder 9, the first inspection cylinder 10, the second inspection cylinder 12, and the first impression cylinder 14" in the Evidence A No. 1 invention, since "provided facing and in contact with each other" is understood to be the technically same state as being "arranged in the state of being in direct contact with each other", the Evidence A No. 1 invention and the Invention 1 are in common, regarding the arrangement of each cylinder, at the point that "the input transfer cylinder (3), each inspection cylinder of the plurality of sheet inspection units and the transfer cylinder are arranged in the state of being in direct contact with each other so as to directly and continuously transport the printed sheets from the input transfer cylinder (3) to each inspection cylinder and the transfer cylinder", and further, the Evidence A No. 1 invention and the Invention 1 are in common at the point that "each sheet inspection unit, the input transfer cylinder (3) and the transfer cylinder are configured to take out the inspected printed sheet from each inspection cylinder after the inspection of the printed sheet is performed by each sheet inspection unit".

According to (A) to (D) above, corresponding features and different features

between the Invention 1 and the Evidence A No. 1 invention are as follows.

(Corresponding feature)

An inspection machine for a printed matter in the form of printed sheets, such as valuable securities, paper money, bank notes, a passport, and other similar paper, comprising:

a sheet feeder (1);

a plurality of pairs of sheet inspection units including an inspection cylinder to transport the sheet printed at the time of inspection and a camera connected to the analyzing device for taking images of the printed sheet during the transport on the inspection cylinder;

an input transfer cylinder (3) to successively bring the printed sheets to the most upstream sheet inspection unit; and

a transfer cylinder for taking away the printed sheets from the most downstream sheet inspection cylinder, wherein

the input transfer cylinder (3), each inspection cylinder of a plurality of sheet inspection units, and the transfer cylinder are arranged in the state of being in direct contact with each other so that the printed sheets are directly and successively transferred from the input transfer cylinder (3) to each inspection cylinder and the transfer cylinder, and

each sheet inspection unit, the input transfer cylinder (3), and the transfer cylinder are configured to take away the inspected and printed sheets from each inspection cylinder after the inspection of the printed sheet has been performed by each sheet inspection unit.

(Different feature 1-1)

The point that, while the number of sets of the plurality of sets of sheet inspection units is three and the camera provided in each sheet inspection unit is a linear camera in the Invention 1, the number of sets of the plurality of sets of sheet inspection units is two and whether or not the camera provided in each sheet inspection unit is a linear camera is not clear in the Evidence A No. 1 invention.

(Different feature 1-2)

The point that, while the sheet inspection unit in the Invention 1 includes the illumination means, whether or not the sheet inspection unit in the Evidence A No. 1 invention includes the illumination means is not clear.

(Different feature 1-3)

The point that, while each sheet inspection unit, the input transfer cylinder (3) and the transfer cylinder are "arranged in such a manner that the inspected printed sheet is taken away from the first to third inspection cylinders (4, 7, 12) only once the inspection of the printed sheet is completed by the first to third inspection units" in the Invention 1, in the Evidence A No. 1 invention, though each sheet inspection unit, the input transfer cylinder (3) and the transfer cylinder take out the inspected printed sheet from each inspection cylinder after the inspection of the printed sheet is performed by each sheet inspection unit, whether or not they are configured to take out the inspected printed sheet from each inspection cylinder only once the inspection of the printed sheet is completed by each sheet inspection unit is not clear.

1-2 Judgement

(1) Regarding the different feature 1-1

a. The demandant's allegation brief

The demandant alleges that providing two inspection units of the similar configuration is just a design matter, in page 18 of the written demand for trial. Also, in page 9 of the oral proceedings statement brief, it is alleged that "even if the camera in claim 1 is specified to be a known linear camera, the matters specifying the invention are not limited" and "even if the linear camera is used, a cylinder diameter is not reduced".

b. The demandee's allegation brief

The demandee alleges the following in page 19 and page 20 of the written reply. "In the present invention, by using the linear camera instead of an area camera, it is possible to load three inspection cylinders on one inspection machine while preventing enlargement and to perform the inspection of a watermark or the like in addition to the inspection of a front side and a reverse side of paper money or the like by one inspection machine. ... In this way, in the present invention, by turning the inspection camera to the linear camera, it is made possible to miniaturize each inspection unit (inspection cylinder) and install three inspection units (inspection cylinder) to one inspection machine, and further, decline of inspection accuracy with a possibility of being caused by the miniaturization is prevented by the configuration of "taking out the inspected printed sheet from each inspection cylinder only once the inspection of the printed sheet is completed by each sheet inspection unit"."

c. Judgement on the body

A First, while two sets of inspection units are provided in the evidence A No. 1 invention, three sets of inspection units are provided in the Invention 1. For this point, since how many sets of inspection units are to be provided in the inspection device is the design matter that a person skilled in the art can appropriately select in consideration of an inspection purpose and an inspection object, provision of three sets of inspection units composed of an inspection cylinder and an inspection device can be appropriately implemented by a person skilled in the art, as is held in the decision (Gyo-ke) No. 10340 issued in 2012.

B Next, the linear camera will be examined.

The Evidence A No. 4 invention is "An infrared ray printed matter checking device in which a light quantity of the infrared LED of each line sensor 3 is determined in the detecting process, the security sheet 14 is supplied for printing. When the sheet 14 is printed during conveyance by the impression cylinder 13 and continuously conveyed as having contact with the impression cylinder, an image of the detected object of the printed sheet 14 is taken by the each line sensor 3." It is recognized that "line sensor" here corresponds to "linear camera" that successively takes linear images of an object, according to the function.

The Evidence A No. 5 invention is "a paper sheet discriminating apparatus for discriminating a paper sheet in terms of its pattern by irradiating said paper sheet with a light to receive at least the reflected one of a transmitted light and a reflected light obtained from said paper sheet. In the paper sheet discriminating apparatus, the bill is transferred in a bill passage between the light emitting unit 110 and the light receiving/emitting unit 120 of the image line sensor 100". It is recognized that "image line sensor" here corresponds to "linear camera", according to the function.

Then, since what kind of camera is to be used as a camera for an inspection of an inspection device is originally the design matter that a person skilled in the art can appropriately select in consideration of an inspection purpose and an inspection object, selection of the linear camera used in the Evidence A No. 4 and No. 5 inventions as the camera for taking images of a sheet which is the inspection object can be appropriately implemented by a person skilled in the art.

Therefore, providing three sets of inspection units composed of an inspection cylinder and an inspection device in the Evidence A No. 1 invention, applying the

Evidence A No. 4 invention and the Evidence A No. 5 invention to the Evidence A No. 1 invention and attaining the configuration according to the different feature 1-1 could be easily implemented by a person skilled in the art.

(2) Regarding the different feature 1-2

a. The demandant's allegation brief

The demandant alleges that illuminating a part to be imaged is very ordinary and does not specify an inventive matter, in page 18 of the written demand for trial.

b. The demandee's allegation brief

The demandee alleges nothing in particular regarding the different feature 1-2.

c. Judgement on the body

While the sheet inspection unit in the Invention 1 is provided with the illumination means, whether or not the sheet inspection unit in the Evidence A No. 1 invention is provided with the illumination means is not clear, however, being provided with the illumination means in an inspection device using a camera or the like is technical common sense in terms of performing an optical inspection, as it is provided also in the Evidence A No. 2 invention and the Evidence A No. 3 invention.

Therefore, attaining the configuration according to the different feature 1-2 in consideration of the technical common sense in the Evidence A No. 1 invention could be easily implemented by a person skilled in the art.

(3) Regarding the different feature 1-3

a. The demandant's allegation brief

The demandant alleges that, in page 3 of the oral proceedings statement brief, as it is described that "For the sheet 5, a surface is inspected by the camera 11 for the surface inspection in the first inspection cylinder 10 first, then it is delivered to the second inspection cylinder 12, and a reverse side is inspected there by the camera 13 for the reverse side inspection." in paragraph [0025] of the Evidence A No. 1, not "just an order of the first inspection and the second inspection" but that it is "delivered" after the first inspection and the second inspection is performed thereafter, that is, "taking out the inspected printed sheet ... only once the inspection ... is completed" is clearly described.

Also, in page 20 of the written demand for trial, the demandant alleges that, in the Evidence A No. 2, it is described that "Only after all the individual images or the

whole image of the sheet is recorded, the sheet is transferred to the second drum 18 for inspecting the front side 2 of the sheet." (page 9, lines 4 to 6) and it is described that "In this case, too, the starting end of the sheet is transferred to the chain gripper devices 21 of the third chain conveyor 19 only after the whole image of the sheet is completely detected." (page 9, lines 21 to 23).

b. The demandee's allegation brief

The demandee alleges, in page 12 of the written reply, that the description of paragraph [0025] of the Evidence A No. 1 simply describes the order of the first inspection and the second inspection and it cannot be recognized that it discloses the constituent component I that is "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 to take out the inspected printed sheet from the first, second or third inspection cylinder (4, 7, 12) only once the inspection of the printed sheet is completed by the first sheet inspection unit, the second sheet inspection unit or the third sheet inspection unit".

Also, in page 14, the demandee alleges that, since no reason or purpose of "transferring the sheet only after all the individual images or the whole image of the sheet is recorded" is described in the Evidence A No. 2, the above description of the Evidence A No. 2 just explains the fact that "only after all the individual images or the whole image of the sheet is recorded, the sheet is transferred" in the case of adopting the arrangement of the drum and the camera as in the embodiment of FIG. 1.

c. Judgement on the body

Considering that it is described in the A No. 1(D) of the Evidence A No. 1 that "With this configuration, the surface of the sheet 5 fed from the paper feeding unit 1 to the inspection unit 2 is inspected by the surface inspection camera 11 in the first inspecting cylinder 10, and after that, the sheet 5 is transferred to the second inspection cylinder 12. The rear surface of the sheet 5 is inspected by the rear surface inspection camera 13 there. Next, the sheet 5 is directly transferred from the second inspection cylinder 12 to the first impression cylinder 14 of the printing unit 3" (paragraphs [0025]-[0026]), it is conceivable for a person skilled in the art that it is usual to understand that the transfer of the sheet from the first inspection cylinder to the second inspection cylinder and from the second inspection cylinder to the first impression cylinder is performed after the inspection in each inspection cylinder is completed, and there is no description in the specification of the case regarding a

specific configuration related to "taking out ... only once completed" in the configuration of "taking out the inspected printed sheet from the first, second or third inspection cylinder (4, 7, 12) only once the inspection of the printed sheet is completed by the first sheet inspection unit, the second sheet inspection unit or the third sheet inspection unit", the different feature relating to the configuration relating to the completion of the inspection is just a prima facie different feature.

Then, the Evidence A No. 2 invention has the configuration that is " A device for the qualitative assessment of the printed sheet 1, comprising: an inspection device configured to include a drum 17 for conveying the printed sheet 1, an illumination device 32 and a CCD area camera 34 for taking images of the sheet 1 on the drum 17; and an inspection device configured to include a drum 18 for conveying the printed sheet 1, an illumination device 33 and a CCD area camera 36 for taking images of the sheet 1 on the drum 18, wherein only after all individual images, or respectively the total image of the reverse side 3 of the sheet 1 on the drum 17 has been recorded, the sheet 1 is then transferred to the second drum 18 for inspecting the front side 2 of the sheet 1, and the beginning of the sheet 1 is only transferred to the chain gripper devices 21 of the third chain conveyor 19 after the entire image of the sheet 1 on the drum 18 has been completely recorded.". It is conceivable that the Evidence A No. 2 invention adopts the configuration of transferring the sheet to the succeeding drum or conveyance device only after the whole image of the sheet is recorded in order to improve accuracy of the transfer of the sheet that lies on the drum, thereby improving accuracy of processing of the sheet. Then, since both of the Evidence A No. 1 invention and the Evidence A No. 2 invention are the invention belonging to the same technical field related to a device that inspects a sheet conveyed by an inspection cylinder or drum using a camera for an inspection, and also improvement of the accuracy of the processing of the sheet wound around a peripheral surface of an inspection cylinder is not only a general aim in the inspection device but also needed as the inspection device is to be miniaturized, it can be said that applying the configuration of the Evidence A No. 2 invention for the Evidence A No. 1 invention and attaining the configuration to take out the inspected sheet from each inspection cylinder only once the inspection in each sheet inspection is completed could be easily arrived at by a person skilled in the art.

Therefore, applying the Evidence A No. 2 invention to the Evidence A No. 1 invention and attaining the configuration according to the different feature 1-3 could be easily achieved by a person skilled in the art.

(4) Summary

Then, effects of the Invention 1 could be easily predicted by a person skilled in the art with the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention, and are not special.

From the above, the Invention 1 could be easily invented by a person skilled in the art based on the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention.

2. Regarding the Invention 2

The Invention 2 corresponds to the one for which the matter specifying the invention that is "the first inspection cylinder (4) is a transparent cylinder, the first illumination means (5) is installed inside the transparent cylinder, and the first linear camera (6) is installed outside the transparent cylinder for inspecting the printed sheet by positive transparency as passing through the printed sheet" is added further to the Invention 1.

2-1 Comparison

When the Invention 2 and the Evidence A No. 1 invention are compared, both are different at the above-described different features 1-1 to 1-3, and are further different at the following point.

(Different feature 2)

The point that, while the first inspection cylinder is a transparent cylinder, the first illumination means is installed inside the transparent cylinder, and the first linear camera is installed outside the transparent cylinder for inspecting the printed sheet by positive transparency as passing through the printed sheet in the Invention 2, no such a configuration is provided in the Evidence A No. 1 invention.

2-2 Judgement

(1) Regarding the different feature 2

a. The demandant's allegation brief

The demandant alleges the following in page 15 of the written demand for trial.

It is alleged that "the Evidence A No. 3 discloses a device that inspects quality of printed paper sheet, and it is described in lines 5 to 10 of the paragraph [0023] that "The first drum 4 is apertured so that it is possible to carry out the various quality

checks. This is because it is necessary to be able to see the surface of the seized sheet from inside the first drum 4. In a first position inside the drum 4, a camera 5 capable of checking by transmission is provided, and facing the camera 5 outside the drum 4, there is an illumination device 6 for illuminating the sheet on an opposite side of the camera 5 to the sheet." This corresponds to the constituent components K, L and M of the second patent invention. However, the drum 4 is not transparent and is apertured, and the arrangement of the camera and the illumination device is opposite to the constituent elements K, L and M".

Also, in pages 20 and 21 of the written demand for trial, the demandant alleges the following.

It is alleged that "(a) The second patent invention specifies that "the first inspection cylinder (4) is a transparent cylinder, the first illumination means (5) is installed inside the transparent cylinder, and the first camera (6) is installed outside the transparent cylinder for inspecting the printed sheet by positive transparency as passing through the printed sheet" as specified by the constituent elements K, L and M in the first patent invention.

(b) In the Evidence A No. 3, as described above, it is described that "The first drum 4 is apertured so that it is possible to carry out the various quality checks. This is because it is necessary to be able to see the surface of the seized sheet from inside the first drum 4. In a first position inside the drum 4, a camera 5 capable of checking by transmission is provided, and facing the camera 5 outside the drum 4, there is an illumination device 6 for illuminating the sheet on an opposite side of the camera 5 to the sheet." (lines 5 to 10 of the paragraph [0023]). This corresponds to the constituent components K, L and M of the second patent invention.

Note that, in the Evidence A No. 6, transmission type defect detector (8) corresponding to the first inspection cylinder (4) is indicated.

(c) In the Evidence A No. 3, differently from the second patent invention, the drum 4 is not transparent and is a hole, the camera (5) is provided not outside but inside the drum (4), and the illumination device (6) is provided not inside but outside the drum (4), however, it is the same at the point of taking positive transparency transmitted through the sheet, and it is practically identical.

Therefore, it is easy to arrive at the configuration of the second patent invention by combining the Evidence A No. 3 or the Evidence A No. 6 with the first patent invention, and the second patent invention does not have inventive step".

b. The demandee's allegation brief

In pages 15 and 16 of the written reply, the demandee alleges the following. For Evidence A No. 3, as is recognized also by the demandant, "the drum 4 is not transparent and is apertured, and the arrangement of the camera and the illumination device is opposite to the constituent components K, L and M". Claim 2 (constituent components K, L and M) describes "the inspection machine as claimed in claim 1, wherein the first inspection cylinder (4) is a transparent cylinder, the first illumination 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 by positive transparency as passing through the printed sheet". In the case of installing the camera inside the cylinder, there is a case that it is needed to enlarge a cylinder diameter compared to the case of arranging the illumination device inside the cylinder. Also, since necessity of maintenance is higher for the linear camera than for the illumination device, it is advantageous to install the camera outside the cylinder. Also, in the case that the cylinder is apertured in the state that the illumination device is installed inside the cylinder, a failure that dust or the like sticks to the illumination device occurs. Therefore, in the second patent invention, the transparent cylinder is adopted. Thus, it must be said that the demandant's allegation regarding Evidence A No. 3 is improper.

Also, in pages 16 and 17 of the written reply, it is alleged that "that is, the invention described in Evidence A No. 6 relates to an inspection method that detects a defect of a sheet for wrapping food, a sheet before printing otherwise, is different from 'an inspection machine for printed matters in the form of printed sheets or an inspection method of printed matters that take images of the printed sheets' described in Claims of the patent of the case, is unrelated to the patent of the case, and cannot configure the constituent component K. Therefore, it cannot be said that a person skilled in the art can easily arrive at the patent invention of the case by combining the invention described in Evidence A No. 6 with other proofs."

c. Judgement on the body

"The first drum 4" and "the illumination device 6" in the Evidence A No. 3 invention correspond to "the first inspection cylinder" and "the first illumination means" in the Invention 2, respectively. Also, "check by transmission" in the Evidence A No. 3 invention is, since the sheet of an inspection object is "papers of value, such as security papers and bank notes" according to Evidence A No. 3(A), technically the same as the inspection by so-called positive transparency for checking a watermark of security papers and bank notes.

Then, Evidence A No. 3(C) of Evidence A No. 3 describes "The first drum 4 is apertured so that it is possible to carry out the various quality checks. This is because it is necessary to be able to see the surface of the seized sheet from inside the drum 4. In a first position inside the drum 4 we have a camera 5 which makes it possible to check by transmission, and facing this camera outside the drum there is a device 6 for illuminating the sheet on its opposite side relative to the sheet.".

Therefore, The Evidence A No. 3 invention has the configuration that the first inspection cylinder is an apertured cylinder, the first illumination means is installed outside the cylinder, and the camera is installed inside the cylinder to inspect the printed sheet by the positive transparency as passing through the printed sheet.

On the other hand, in the Evidence A No. 6 invention, "the third inspection roll (25) uses a transparent/semi-transparent hollow pipe made of the acrylic resin to check the flat sheet with the transmitted light. A light projector (9) is provided in the third inspection roll (25) and a light receiver (10) is provided and embedded above the same so that the third inspection roll (25) is configured to act as a transmission-type defect detecting device (8)", and "inspection roll", "flat sheet", and "transparent/semi-transparent hollow pipe" in the Evidence A No. 6 invention correspond to "inspection cylinder", "sheet", and "transparent cylinder" in the Invention 2, respectively.

Therefore, in the Evidence A No. 6 invention, the inspection cylinder is the transparent cylinder, the projector is installed inside the transparent cylinder, the photodetector is installed outside the transparent cylinder to inspect the sheet by transmission, and a defect inspection capable of discriminating a defect of the sheet due to a bug is provided.

Since the Evidence A No. 1 invention and the Evidence A No. 3 invention are both the device that inspects printed sheets such as security papers and bank notes, the Evidence A No 3 invention relating to the inspection by the positive transparency can be applied to the Evidence A No. 1 invention, however, the inspection device to which it is applied is different from the Invention 2 at the following points, that is, that the first inspection cylinder (4) is the transparent cylinder, the first illumination means (5) is installed inside the transparent cylinder, and the first linear camera (6) is installed outside the transparent cylinder, in the configuration according to the different feature 2.

Then, in the Evidence A No. 6 invention, even though the transparent cylinder

is included, printed sheets such as security papers and bank notes are not inspected, and it is not the inspection device including illuminations and linear cameras.

Therefore, attaining the configuration according to the different feature 2 by applying the transparent cylinder of the Evidence A No. 6 invention for a different inspection object further to the inspection device for which the Evidence A No. 3 invention is applied to the Evidence A No. 1 invention, simultaneously changing the arrangement of the illumination means and the camera, installing the illumination means inside the transparent cylinder, installing the camera outside the transparent cylinder, and changing design of the camera to the linear camera further is over ordinary creativity of a person skilled in the art, and cannot be easily arrived at by a person skilled in the art.

(2) Summary

Then, effects of the Invention 2 could not be easily predicted by a person skilled in the art with the Evidence A No. 1 to Evidence A No. 6 inventions, and the effects are demonstrated as described in the specification of the case.

As described above, the Invention 2 could not be easily invented by a person skilled in the art based on the Evidence A No. 1 to Evidence A No. 6 inventions.

3. Regarding the Invention 3

The Invention 3 corresponds to the one for which the matter specifying the invention that is "the second sheet inspection unit inspects a first illuminated side of the printed sheet" is added further to the Invention 1.

3-1 Comparison

When the Invention 3 and the Evidence A No. 1 invention are compared, both are different at the above-described different features 1-1 to 1-3, and are further different at the following point.

(Different feature 3)

The point that, while the second sheet inspection unit inspects the first illuminated side of the printed sheet in the Invention 3, whether or not the second sheet inspection unit inspects the first illuminated side of the printed sheet is not clear in the Evidence A No. 1 invention.

3-2 Judgement

(1) Regarding the different feature 3

a. The demandant's allegation brief

The demandant alleges, in page 21 of the written demand for trial for invalidation, that "Since the illuminated side is inspected, it is the same as the camera 11 for the surface inspection as the first inspection device or the camera 13 for the reverse side inspection as the second inspection device in the inspection unit 2 in Evidence A No. 1. In Evidence A No. 1, though the illumination means is not specified, it is well-known art that the illumination means is provided in the case of picking up images with a camera.

Note that the configuration of inspecting the illuminated side is described not only in Evidence A No. 1 but also in Evidence A No. 2 and Evidence A No. 3 or the like. Therefore, the third patent invention could be easily invented by combining the well-known art or Evidence A No. 3 or the like with the first patent invention or the second patent invention, and does not have the inventive step.".

b. The demandee's allegation brief

The demandee alleges, in page 21 of the written reply, that "The third patent invention refers to the first patent invention, and since the first patent invention has the inventive step, the third patent invention has the inventive step.".

c. Judgement on the body

Regarding "the first illuminated side of the printed sheet" in the different feature 3, it is described that "the second inspection unit takes a picture of one side of the sheet on the cylinder 7, for example, the recto side of the sheet," in [0015] of the specification of the case, it is described that "the third inspection unit is similar to the second inspection unit but takes a picture of one side of the sheet on the cylinder 7, for example, the verso side of the sheet if the second inspection unit inspects the recto side," in [0017], and further, it is described that "of course, in the machine of FIG. 1, the respective positions of the different inspection units may be varied and one side (recto or verso) of the sheets is inspected first, then the other side (verso or recto) is inspected," in [0030].

Here, when considering it together with "the second illuminated side of the printed sheet" in the Invention 4, it is recognized that "the first illuminated side and the second illuminated side" of the printed sheet is in the relation of "recto and verso" or "one side and the other side" of the sheet on the cylinder 7. In other words, it can

be also said that it is in the relation of "the front side and the reverse side" of the sheet on the cylinder 7.

Now, the Evidence A No. 1 invention is "a camera 11 for a surface inspection that inspects the sheet 5 conveyed by the first inspection cylinder 10, a second inspection cylinder 12 that is provided facing and in contact with the first inspection cylinder 10 and conveys the sheet 5 received from the first inspection cylinder 10, a camera 13 for a reverse side inspection that inspects the sheet 5 conveyed by the second inspection cylinder 12...", and the reverse side of the sheet is inspected after the front side of the sheet is inspected. Therefore, it can be said that, in the Evidence A No. 1 invention, the first illuminated side of the printed sheet is inspected and the second illuminated side of the printed sheet is inspected thereafter.

Here, in the Evidence A No. 1 invention, there are two sets of the inspection units, however, as judged in 1. 1-2 (1) c. A described above, providing three sets of the inspection units in the Evidence A No. 1 invention is the matter that a person skilled in the art can appropriately implement in consideration of an inspection purpose and an inspection object. Then, attaining the configuration according to the different feature 3 by inspecting the first illuminated side of the printed sheet in the second set of the inspection unit is the design matter that a person skilled in the art can appropriately select when providing three sets of the inspection units in the Evidence A No. 1 invention.

(2) Summary

Then, effects of the Invention 3 could be easily predicted by a person skilled in the art with the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention, and are not special.

As described above, the Invention 3 could be easily invented by a person skilled in the art based on the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention.

4. Regarding the Invention 4

The Invention 4 corresponds to the one for which the matter specifying the invention that is "the third sheet inspection unit inspects a second illuminated side of the printed sheet" is added further to the Invention 3.

4-1 Comparison

When the Invention 4 and the Evidence A No. 1 invention are compared, both are different at the above-described different features 1-1 to 1-3 and the different feature 3, and are further different at the following point.

(Different feature 4)

The point that, while the third sheet inspection unit inspects the second illuminated side of the printed sheet in the Invention 4, whether or not the inspection unit inspects the second illuminated side of the printed sheet is not clear in the Evidence A No. 1 invention.

4-2 Judgement

(1) Regarding the different feature 4

As is examined in 3-2 (1) c. described above, it can be said that, in the Evidence A No. 1 invention, the first illuminated side of the printed sheet is inspected and the second illuminated side of the printed sheet is inspected thereafter. Then, in the Evidence A No. 1 invention, there are two sets of the inspection units, however, as judged in 1. 1-2 (1) c. A described above, providing three sets of the inspection units in the Evidence A No. 1 invention is the matter that a person skilled in the art can appropriately implement in consideration of an inspection purpose and an inspection object. Then, attaining the configuration according to the different feature 4 by inspecting the second illuminated side which is the opposite side of the sheet inspected in the second set of the inspection unit in the third set of the inspection unit is the design matter that a person skilled in the art can appropriately select when providing three sets of the inspection units in the Evidence A No. 1 invention.

(2) Summary

Then, effects of the Invention 4 could be easily predicted by a person skilled in the art with the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention, and are not special.

As described above, the Invention 4 could be easily invented by a person skilled in the art based on the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention.

5. Regarding the Invention 5

The Invention 5 corresponds to the one for which the matter specifying the invention that is "the second and third sheet inspection units each further include at least one non-visible feature inspection unit (10, 11, 15, 16)" is added further to the Invention 1.

5-1 Comparison

When the Invention 5 and the Evidence A No. 1 invention are compared, both are different at the above-described different features 1-1 to 1-3, and are further different at the following point.

(Different feature 5)

The point that, while the second and third sheet inspection units each further include at least one non-visible feature inspection unit (10, 11, 15, 16) in the Invention 5, no such a configuration is provided in the Evidence A No. 1 invention.

5-2 Judgement

(1) Regarding the different feature 5

The Evidence A No. 4 invention is "An infrared ray printed matter checking device in which a light quantity of the infrared LED of each line sensor 3 is determined in the detecting process, the security sheet 14 is supplied for printing. When the sheet 14 is printed during conveyance by the impression cylinder 13 and continuously conveyed as having contact with the impression cylinder, an image of the detected object of the printed sheet 14 is taken by the each line sensor 3.", and since an infrared inspection is a general inspection technology as a non-visible inspection, it can be said that the non-visible feature inspection unit is provided in the Evidence A No. 4 invention. Then, both of the Evidence A No. 1 invention and the Evidence A No. 4 invention are the inventions belonging to the same technical field related to a device that inspects a sheet conveyed by an inspection cylinder or drum using a camera for an inspection. Also, as judged in 1. 1-2 (1) c. A described above, changing two sets of inspection units to three sets in the Evidence A No. 1 invention is the matter that a person skilled in the art can appropriately implement in consideration of an inspection purpose and an inspection object.

Therefore, attaining the configuration according to the different feature 5 by providing three sets of the inspection units in the Evidence A No. 1 invention, and adding the non-visible feature inspection unit of the Evidence A No. 4 invention to the second sheet inspection unit and the third sheet inspection unit further is within the

range of a design change that a person skilled in the art appropriately implements when providing three sets of the inspection units in the Evidence A No. 1 invention in consideration of an inspection purpose and an inspection object.

(2) Summary

Then, effects of the Invention 5 could be easily predicted by a person skilled in the art with the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention, and are not special.

As described above, the Invention 5 could be easily invented by a person skilled in the art based on the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention.

6. Regarding the Invention 6

The Invention 6 corresponds to the one for which the matter specifying the invention that is "the non-visible feature inspection unit (10, 11, 15, 16) includes means for detecting IR, UV or magnetic properties on the printed sheets" is added further to the Invention 5.

6-1 Comparison

When the Invention 6 and the Evidence A No. 1 invention are compared, both are different at the above-described different features 1-1 to 1-3 and the different feature 5, and are further different at the following point.

(Different feature 6)

The point that, while the non-visible feature inspection unit (10, 11, 15, 16) includes means for detecting IR, UV or magnetic properties on the printed sheets in the Invention 6, no such a configuration is provided in the Evidence A No. 1 invention.

6-2 Judgement

(1) Regarding the different feature 6

The Evidence A No. 4 invention is "An infrared ray printed matter checking device in which a light quantity of the infrared LED of each line sensor 3 is determined in the detecting process, the security sheet 14 is supplied for printing. When the sheet 14 is printed during conveyance by the impression cylinder 13 and

continuously conveyed as having contact with the impression cylinder, an image of the detected object of the printed sheet 14 is taken by the each line sensor 3.".

Then, since infrared (IR) detection is the detection of recognizing a characteristic of an object by irradiating a material of a measurement object with infrared rays and analyzing transmission or reflected light, it can be said that the infrared ray printed matter checking device in the Evidence A No. 4 invention includes means for detecting IR. Also, the infrared printed matter inspection system is also the non-visible feature inspection unit as indicated in 5-2 (1) described above.

Therefore, attaining the configuration according to the different feature 6 by applying the means for detecting IR in the Evidence A No. 4 invention in the Evidence A No. 1 invention could be easily implemented by a person skilled in the art as indicated in 5-2 (1) described above.

(2) Summary

Then, effects of the Invention 6 could be easily predicted by a person skilled in the art with the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention, and are not special.

As described above, the Invention 6 could be easily invented by a person skilled in the art based on the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention.

7. Regarding the Invention 7

The Invention 7 corresponds to the one for which the matter specifying the invention that is "the first inspection cylinder (4), the second inspection cylinder (7), and the third inspection cylinder (12) are carrying only one set of grippers each, and the diameters of the first inspection cylinder (4), the second inspection cylinder (7), and the third inspection cylinder (12) are minimized for minimal transport and inspection time" is added further to the Invention 1.

7-1 Comparison

When the Invention 7 and the Evidence A No. 1 invention are compared, both are different at the above-described different features 1-1 to 1-3, and are further different at the following point.

(Different feature 7)

The point that, while the first inspection cylinder (4), the second inspection cylinder (7), and the third inspection cylinder (12) are carrying only one set of grippers each, and the diameters of the first inspection cylinder (4), the second inspection cylinder (7), and the third inspection cylinder (12) are minimized for minimal transport and inspection time in the Invention 7, no such a configuration is specified in the Evidence A No. 1 invention.

7-2 Judgement

(1) Regarding the different feature 7

a. The demandant's allegation brief

The demandant alleges, in pages 22 and 23 of the written demand for trial for invalidation, that "It is well known in a printing technical field that a cylinder that conveys sheets has grippers, as the patentee also describes that "as is known in the art, the successive sheets are held on the cylinder 7 by gripper means placed in a pit of the cylinder" in [0015] of the patent specification. While it is described that "a first inspection cylinder 10 that holds and conveys a sheet 5 while winding it around a peripheral surface" in [0017] of Evidence A No. 1, it is common knowledge to a person skilled in the art that "grippers" perform "holding". In FIG. 1 of Evidence A No. 1, the gripper means is omitted just to avoid complication of the figure. In Evidence A No. 2, in both FIG. 1 and FIG. 2, the gripper means is specified as a first holding device 27. Then, whether or not to have only single gripper means is just a simple selection. The patentee also recognizes this as it is described that "Preferably, as shown in FIG. 1 by way of a non-limiting example, the cylinders are dimensioned to carry one single sheet to be inspected. Of course, other configurations could be envisaged in which two or three sheets are carried by each cylinder." in [0022] of the patent specification.

Also, how to determine the diameter of the inspection cylinder (4, 7, 12) is only a design matter, compacting is a common matter to be taken into consideration when designing any machine or device, and "reduction for shortening transport and inspection time" is just the design matter that a person skilled in the art can naturally implement."

b. The demandee's allegation brief

The demandee alleges, in page 22 of the written reply, that "The seventh patent invention refers to the first patent invention, and since the first patent invention has the inventive step, the seventh patent invention has the inventive step. Also, the

feature (miniaturization of the cylinder diameter) obtained by the configuration of the first patent invention is clarified, and the design matter alleged by the demandant is not described. The detail will be described later in (4-2).", and also alleges, in page 26, that "Claim 7 of the case directly and indirectly refers to Claim 1. It clarifies an intention (purpose) of the configuration of Claim 1, complements the configuration of Claim 1, and does not describe the design matter.".

c. Judgement on the body

A First, it is described that "... the inspection unit 2 ... a first inspecting cylinder 10 which holds and conveys the sheet 5 while winding it around the peripheral surface" in Evidence A No. 1(C), and it is clear for a person skilled in the art that the sheet holding means is provided in the Evidence A No. 1 invention regarding "holding" here.

Also, it is described that "... The grippers 27 of the first drum 17 transfer the beginning of the sheet 1 to the grippers 27 of the second drum 18" in Evidence A No. 2(D), and a single set of grippers is described respectively for the drums 17 and 18. Since the drums 17 and 18 in the Evidence A No. 2 invention can be regarded as the respective cylinders, it can be said that the respective cylinders in the Evidence A No. 2 invention carry a single set of grippers respectively.

Both of the Evidence A No. 1 invention and the Evidence A No. 2 invention are the inventions belonging to the same technical field related to a device that inspects a sheet conveyed by an inspection cylinder or drum using a camera for an inspection. They are also in common at the point that the cylinder is provided with holding means.

Also, as judged in 1. 1-2 (1) c. A described above, changing two sets of inspection units to three sets in the Evidence A No. 1 invention is the matter that a person skilled in the art can appropriately implement in consideration of an inspection purpose and an inspection object.

Therefore, providing three sets of the inspection units in the Evidence A No. 1 invention, applying the Evidence A No. 2 invention, and attaining "the first inspection cylinder (4), the second inspection cylinder (7) and the third inspection cylinder (12) each carries only one set of grippers" could be easily implemented by a person skilled in the art.

B Next, "a diameter of the first inspection cylinder (4), the second inspection cylinder (7) and the third inspection cylinder (12) is reduced in order to shorten

transport and inspection time" will be examined.

The problem of miniaturization and weight reduction of a machine and a device is not just a general problem, and the necessity of the miniaturization of each inspection unit is naturally generated as the number of sets of the inspection units is increased in the Evidence A No. 1 invention. Therefore, since the inspection cylinder which is a component is miniaturized in order to miniaturize the inspection unit, it can be said that reducing the diameter of each inspection cylinder in order to shorten the transport and inspection time is a design matter that a person skilled in the art can appropriately select.

Therefore, attaining the configuration according to the different feature 7 by providing three sets of the inspection units and applying the Evidence A No. 2 invention in the Evidence A No. 1 invention could be easily implemented by a person skilled in the art.

(2) Summary

Then, effects of the Invention 7 could be easily predicted by a person skilled in the art with the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention, and are not special.

As described above, the Invention 7 could be easily invented by a person skilled in the art based on the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention.

8. Regarding the Invention 8

The Invention 8 corresponds to the one for which the matter specifying the invention that is "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 arranged in a zigzag manner such that a transport length of a printed sheet on each of the first inspection cylinder (4), the second inspection cylinder (7), and the third inspection cylinder (12) between an input location where a printed sheet is transferred onto the first inspection cylinder (4), the second inspection cylinder (7), or the third inspection cylinder (12) and an output location where the printed sheet is transferred away from the first inspection cylinder (4), the second inspection cylinder (7), or the third inspection cylinder (12) is optimized for a predetermined sheet length" is added further to the Invention 1.

8-1 Comparison

When the Invention 8 and the Evidence A No. 1 invention are compared, both are different at the above-described different features 1-1 to 1-3, and are further different at the following point.

(Different feature 8)

The point that, while 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 arranged in a zigzag manner such that a transport length of a printed sheet on each of the first inspection cylinder (4), the second inspection cylinder (7), and the third inspection cylinder (12) between an input location where a printed sheet is transferred onto the first inspection cylinder (4), the second inspection cylinder (7), or the third inspection cylinder (12) and an output location where the printed sheet is transferred away from the first inspection cylinder (4), the second inspection cylinder (7), or the third inspection cylinder (12) is optimized for a predetermined sheet length in the Invention 8, no such a configuration is specified in the Evidence A No. 1 invention.

8-2 Judgement

(1) Regarding the different feature 8

a. The demandant's allegation brief

The demandant alleges, in page 23 of the written demand for trial, that "It is well known, as it is described in FIG. 1 of Evidence A No. 1, that the cylinders from an input side to an output side are arranged in a zigzag shape in a sheet inspection machine. It cannot be said that "to optimize, as a predetermined sheet length, a transport length of the sheet" specifies the inventive matter, and is also unclear.

Therefore, the eighth patent invention does not specify any inventive matter for the first to seventh patent inventions, and does not have the inventive step.".

Also, in page 10 of the oral proceedings statement, it is alleged that "the arrangement of the delivery cylinder 9, the first inspection cylinder 10, the second inspection device 12, and the first impression cylinder 14 in Evidence A No. 1 is "a bent line", that is, zigzag, and they are not "arranged roughly on a straight line" as alleged by the demandee."

b. The demandee's allegation brief

The demandee alleges the following, in page 22 of the written reply.

"The eighth patent invention indirectly refers to the first patent invention, and since the first patent invention has the inventive step, the eighth patent invention has the inventive step. Also, while the detail will be described later in (4-2), the demandant alleges that the constituent component T ("zigzag") is described in Evidence A No. 1. However, it is improper. "Zigzag" is "A serrated bent line. A lightning shape. A flash shape. A Z shape." in Kojien dictionary the fifth edition, and is "A straight line bent many times to left and right. Also, such a shape or looks. A lightning shape. A Z shape." in Digital Daijisen dictionary. In FIG. 1 of Evidence A No. 1, the first inspection cylinder 10, the second inspection cylinder 12 and the first impression cylinder 14 are arranged roughly on one straight line, and it cannot be possibly called "zigzag". The constituent component T of the eighth patent invention is not described in Evidence A No. 1. That is, only at this point, the allegation of the demandant is improper and the eighth patent invention has the inventive step."

c. Judgement on the body

In FIG. 1 of Evidence A No. 1, it is observed that the first inspection cylinder 10 is clearly arranged more at the upper left than the delivery cylinder 9, the second inspection cylinder 12 is arranged slightly at the lower left to the first inspection cylinder 10, and the first impression cylinder 14 is arranged slightly at the upper left to the second inspection cylinder 12, and at least it cannot be said that they are arranged roughly on one straight line. Also, as alleged by the demandee, too, "zigzag" has various meanings and definitions and is not a determined shape. If so, it can be said that the arrangement of the delivery cylinder 9, the first inspection cylinder 10, the second inspection cylinder 12 and the first impression cylinder 14 in the Evidence A No. 1 invention is the arrangement in a zigzag state (form). Then, as judged in 1. 1-2 (1) c. A described above, changing two sets of inspection units to three sets in the Evidence A No. 1 invention is the matter that a person skilled in the art can appropriately implement in consideration of an inspection purpose and an inspection object.

Also, the necessity of the miniaturization of each inspection unit is naturally generated as the number of sets of the inspection units is increased in the Evidence A No. 1 invention. For the miniaturization of the inspection unit, "so as to optimize, as a predetermined sheet length, a transport length of the printed sheet on each of the first inspection cylinder (4), the second inspection cylinder (7) and the third

inspection cylinder (12)" is just a design matter regarding the transport length of the printed sheet on each cylinder.

Therefore, attaining the configuration according to the different feature 8 based on the Evidence A No. 1 invention in consideration of the design matter could be easily implemented by a person skilled in the art.

(2) Summary

Then, effects of the Invention 8 could be easily predicted by a person skilled in the art with the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention, and are not special.

As described above, the Invention 8 could be easily invented by a person skilled in the art based on the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention.

9. Regarding the Invention 9

The Invention 9 corresponds to the one for which the matter specifying the invention that is "the transport length of the printed sheet on the first inspection cylinder (4), the second inspection cylinder (7), or the third inspection cylinder (12) is slightly greater than the length of the printed sheet to be inspected" is added further to the Invention 8.

9-1 Comparison

When the Invention 9 and the Evidence A No. 1 invention are compared, both are different at the above-described different features 1-1 to 1-3 and the different feature 8, and are further different at the following point.

(Different feature 9)

The point that, while the transport length of the printed sheet on the first inspection cylinder (4), the second inspection cylinder (7), or the third inspection cylinder (12) is slightly greater than the length of the printed sheet to be inspected in the Invention 9, no such a configuration is specified in the Evidence A No. 1 invention.

9-2 Judgement

(1) Regarding the different feature 9

a. The demandant's allegation brief

The demandant alleges that, in page 23 of the written demand for trial and in page 10 of the oral proceedings statement, specifying "the transport length of the sheet" is just a simple design matter.

b. The demandee's allegation brief

The demandee alleges, in page 27 of the written reply, that "The demandant of trail for invalidation focuses only on the description of the ninth patent invention, and does not consider the relation with the eighth patent invention. The ninth patent invention refers to the eighth patent invention, and by "the input transfer cylinder (3), the inspection cylinders (4, 7, 12), and the output transfer cylinder (17) are arranged in a zigzag manner such that a transport length of the sheet on the inspection cylinder (4, 7, 12) is optimized for a predetermined sheet length" in the eighth patent invention and "the transport length of the sheet is slightly longer than the length of the sheet to be inspected" further in ninth patent invention, the entire inspection machine is compacted as much as possible, the sheet transport time is shortened, and inspection efficiency is improved. It is clear that specifying "the transport length of the sheet" is not just a design matter.".

c. Judgement on the body

As judged in 1. 1-2 (3) c. described above, it is described that "With this configuration, the surface of the sheet 5 fed from the paper feeding unit 1 to the inspection unit 2 is inspected by the surface inspection camera 11 in the first inspecting cylinder 10, and after that, the sheet 5 is transferred to the second inspection cylinder 12. The rear surface of the sheet 5 is inspected by the rear surface inspection camera 13 there. Next, the sheet 5 is directly transferred from the second inspection cylinder 12 to the first impression cylinder 14 of the printing unit 3" (paragraphs [0025]-[0026]) in Evidence A No. 1(D), it is conceivable for a person skilled in the art that it is usual to understand that the transfer of the sheet from the first inspection cylinder to the second inspection cylinder and from the second inspection cylinder to the first impression cylinder is performed after the inspection in each inspection cylinder is completed. Then, as judged in 1. 1-2 (1) c. A described above, changing two sets of inspection units to three sets in the Evidence A No. 1 invention is the matter that a person skilled in the art can appropriately implement in consideration of an inspection purpose and an

inspection object.

If so, it is natural to design the transport length of the printed sheet on the first inspection cylinder (4), the second inspection cylinder (7), or the third inspection cylinder (12) to be longer than the length of the printed sheet to be inspected, and also, in the Evidence A No. 1 invention, in order to miniaturize the inspection unit as the number of sets of the inspection units is increased, making it slightly long without making it longer than needed in consideration of the inspection efficiency could be easily arrived at by a person skilled in the art.

Therefore, attaining the configuration according to the different feature 9 by providing three sets of the inspection units and making the transport length of the printed sheet on the inspection cylinder slightly longer than the length of the printed sheet to be inspected in the Evidence A No. 1 invention could be easily implemented by a person skilled in the art.

(2) Summary

Then, effects of the Invention 9 could be easily predicted by a person skilled in the art with the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention, and are not special.

As described above, the Invention 9 could be easily invented by a person skilled in the art based on the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention.

10. Regarding the Invention 10

The Invention 10 corresponds to the one for which the matter specifying the invention that is "further comprising a marking unit (19, 20) placed downstream of the output transfer cylinder (17) for marking defective sheets." is added further to the Invention 1.

10-1 Comparison

When the Invention 10 and the Evidence A No. 1 invention are compared, both are different at the above-described different features 1-1 to 1-3, and are further different at the following point.

(Different feature 10)

The point that, while a marking unit (19, 20) installed downstream of the

output transfer cylinder (17) for marking defective sheets is further included in the Invention 10, no such a configuration is specified in the Evidence A No. 1 invention.

10-2 Judgement

(1) Regarding the different feature 10

a. The demandant's allegation brief

The demandant alleges, in page 24 of the written demand for trial, that Evidence A No. 3 discloses a marking device 19 that "applies a mark to the upper part of the sheets that are found to be defective" (paragraph [0026]), and the tenth patent invention can be easily arrived at by a person skilled in the art by combining Evidence A No. 3 with the first to ninth patent inventions, and does not have the inventive step.

b. The demandee's allegation brief

The demandee alleges nothing in particular regarding the tenth patent invention.

c. Judgement on the body

It is described in Evidence A No. 3(D) that "After the sheets have been numbered, they run past an optoelectronic device 17 for checking the printing quality of the numbering. Next, the sheet S is taken up by a chain transfer device 18 and the sheet runs past a marking device 19. This device 19 applies a mark to the upper part of the sheets that have been found to be defective, either during quality check of the printing by reflection or transmission, or by the device for checking the printing quality of the numbering.", and the marking device 19 corresponds to "the marking unit placed for marking defective sheets" in the Invention 10. Then, since it is described in Evidence A No. 3(E) that "The installation described in FIG. 1 is in its most complete form and it makes it possible, from a stack of sheets S, to carry out firstly a check of the printing quality by reflection and by transmission, ... thereafter checks the printing quality, performs transfer past a device affixing a mark on the sheets having a defect", it is clear that the marking device 19 is provided downstream of the output transfer cylinder after the inspection.

Then, both of the Evidence A No. 1 invention and the Evidence A No. 3 invention are related to a device that inspects a sheet conveyed by an inspection cylinder or drum using a camera for an inspection, and attaining the configuration according to the different feature 10 by applying the Evidence A No. 3 invention in

the Evidence A No. 1 invention could be easily implemented by a person skilled in the art.

(2) Summary

Then, effects of the Invention 10 could be easily predicted by a person skilled in the art with the Evidence A No. 1 invention to the Evidence A No. 5 invention, and are not special.

As described above, the Invention 10 could be easily invented by a person skilled in the art based on the Evidence A No. 1 invention to the Evidence A No. 5 invention.

11. Regarding the Invention 11

The Invention 11 corresponds to the one for which the matter specifying the invention that is "each of the first to third linear camera (6, 9, 14) takes successive linear images of the printed sheet being inspected and is synchronized with the sheet transport on the associated first to third inspection cylinders (4, 7, 12)" is added further to the Invention 1.

11-1 Comparison

When the Invention 11 and the Evidence A No. 1 invention are compared, both are different at the above-described different features 1-1 to 1-3, and are further different at the following point.

(Different feature 11)

The point that, while each of the first to third linear camera (6, 9, 14) takes successive linear images of the printed sheet being inspected and is synchronized with the sheet transport on the associated first to third inspection cylinders (4, 7, 12) in the Invention 11, it is unclear for such a configuration in the Evidence A No. 1 invention.

11-2 Judgement

(1) Regarding the different feature 11

a. The demandant's allegation brief

The demandant alleges the following, in page 24 of the written demand for trial.

As described in Evidence A No. 4, Evidence A No. 5 or the like, it is known

that a printed surface is inspected by a line sensor having the same function as a linear camera. Also, it is very ordinary that the operation of the line sensor needs to be synchronized with movement of a printed matter, and for example, in Evidence A No. 4, it is described that operation start of the line sensor is controlled by a rotary encoder ([0023]).

Therefore, the 11th patent invention can be easily invented by combining a well-known technology disclosed in Evidence A No. 4 or Evidence A No. 5 or the like with the first to tenth patent inventions, and does not have the inventive step.

b. The demandee's allegation brief

The demandee alleges the following, claiming that the demandant's allegation is improper.

Claim 11 directly or indirectly refers to Claim 1, and since three inspection cylinders are arranged and it is more difficult to secure accuracy of imaging (inspection) of each camera compared to the case of two inspection cylinders, the fact that the linear camera is synchronized with sheet transport on the inspection cylinder (4, 7, 12) and the fact that "configured to take out the inspected printed sheet from each inspection cylinder (4, 7, 12) only once the inspection of the printed sheet is completed by each inspection unit" which is the configuration of Claim 1 in association with it are linked, and the accuracy of imaging (inspection) of each camera is secured. Therefore, the 11th patent invention could not be easily invented, and has the inventive step.

c. Judgement on the body

As judged in 1. 1-2 (1) c. described above, providing three sets of inspection units composed of an inspection cylinder and an inspection device in the Evidence A No. 1 invention, applying the Evidence A No. 4 invention and the Evidence A No. 5 invention to the Evidence A No. 1 invention and attaining the configuration according to the different feature 1-1, that is, turning the number of sets of the plurality of sets of sheet inspection units to three and turning the camera provided in each sheet inspection unit to a linear camera, could be easily implemented by a person skilled in the art. Then, it is technical common sense in the inspection of sheets that the linear camera takes successive linear images of the printed sheets to be inspected and needs to be synchronized with sheet transport.

Note that, while the demandee alleges that "configured to take out the inspected printed sheet from each inspection cylinder (4, 7, 12) only once the inspection of the

printed sheet is completed by each inspection unit" and the synchronization of the linear camera are linked to secure the accuracy of imaging (inspection) of each camera, as judged in 1. 1-2 (3) c. described above, "configured to take out the inspected printed sheet from each inspection cylinder (4, 7, 12) only once the inspection of the printed sheet is completed by each inspection unit" could be easily arrived at by a person skilled in the art by applying the configuration of the Evidence A No. 2 invention to the Evidence A No. 1 invention, and linking as described above could be appropriately implemented by a person skilled in the art.

Therefore, attaining the configuration according to the different feature 11 by providing three sets of inspection units and applying the Evidence A No. 4 and Evidence A No. 5 inventions in the Evidence A No. 1 invention could be easily implemented by a person skilled in the art.

(2) Summary

Then, effects of the Invention 11 could be easily predicted by a person skilled in the art with the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention, and are not special.

As described above, the Invention 11 could be easily invented by a person skilled in the art based on the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention.

12. Regarding the Invention 12

The Invention 12 corresponds to the one for which the matter specifying the invention that is "each of the first to third inspection cylinders includes an encoder for synchronizing operation of the associated linear camera" is added further to the Invention 11.

12-1 Comparison

When the Invention 12 and the Evidence A No. 1 invention are compared, both are different at the above-described different features 1-1 to 1-3 and the different feature 11, and are further different at the following point.

(Different feature 12)

The point that, while each of the first to third inspection cylinders includes an encoder for synchronizing operation of the associated linear camera in the Invention 12, no such a configuration is provided in the Evidence A No. 1 invention.

12-2 Judgement

(1) Regarding the different feature 12

a. The demandant's allegation brief

The demandant alleges the following, in page 24 of the written demand for trial.

As described in Evidence A No. 4, "rotary encoder" as means for synchronization is well-known. Therefore, the 12th patent invention can be easily invented by combining a well-known technology disclosed in Evidence A No. 4 or the like with the 11th patent invention, and does not have the inventive step.

b. The demandee's allegation brief

The demandee alleges nothing for Claim 12.

c. Judgement on the body

In Evidence A No. 4(C), it is described that "A rotary encoder 1 is a device that outputs pulses illustrated in FIG. 6(a) every time the impression cylinder 13 rotated at a fixed angle regardless of time, ... scan of each line sensor 3 and operation start of an A/D converter 9 or the like are controlled....", and it is described that the operation start of each line sensor 3 is controlled by the rotary encoder. Then, it is clear that the rotary encoder 1 is an encoder and is provided in each cylinder having a line sensor. Therefore, each cylinder in the Evidence A No. 4 invention includes an encoder for a synchronizing operation of a linear camera.

Then, as judged in 1. 1-2 (1) c. A described above, changing two sets of inspection units to three sets in the Evidence A No. 1 invention is the design matter that a person skilled in the art can appropriately select in consideration of an inspection purpose and an inspection object.

Therefore, attaining the configuration according to the different feature 12 by providing three sets of inspection units and applying the Evidence A No. 4 invention in the Evidence A No. 1 invention could be easily implemented by a person skilled in the art.

(2) Summary

Then, effects of the Invention 12 could be easily predicted by a person skilled in the art with the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention, and are not special.

As described above, the Invention 12 could be easily invented by a person skilled in the art based on the Evidence A No. 1 invention, the Evidence A No. 2 invention, the Evidence A No. 4 invention, and the Evidence A No. 5 invention.

13. Regarding the Invention 13

13-1 Comparison

The Invention 13 and the Evidence A No. 3 invention are compared.

(A) A "printed sheet, for example, papers of value such as bank notes" in the Evidence A No. 3 invention corresponds to a "printed matter in the form of printed sheet such as valuable securities, paper money, bank notes, a passport, and other similar paper" in the Invention 13 from the point of view of meaning of the words, function, or the structure. Similarly, the "feed device 1" corresponds to the "feeder", and "the sheet" corresponds to "the printed sheet". The phrase in the Evidence A No. 3 invention such that "the sheet is taken up by a chain transfer device 18 and the sheet runs past a marking device 19, and this device 19 applies a mark to the sheets that have been found to be defective during quality check of the printing by reflection or transmission" corresponds to a phrase such that "the printed sheets are transferred to a marking unit and are marked as defective if the result of one of the first to third inspection shows a defect" in the corrected patent invention 13, and a phrase such that "after that, sheets are directed toward a stacking device, and the acceptable sheets are separated from those that are not" corresponds to a phrase such that "once marking has been performed, the printed sheets are transported in a delivery unit and sorted in delivery piles depending on whether or not the printed sheets are marked as being defective".

(B) According to the description such that "the sheets which have not been treated, whether not checked or not numbered" in the Evidence A No. 3(E), the "processing" in the Evidence A No. 3 invention includes the inspection. Therefore, "A method for operating a device for treating a printed sheet, for example, papers of value such as bank notes" in the Evidence A No. 3 invention corresponds to "An inspection process for printed matter in the form of printed sheet such as valuable securities, paper money, bank notes, a passport, and other similar paper" in the Invention 13.

(C) The "drum 4", the "camera 5", "the illumination device 6", "the device 8", and

"the optoelectronic reflection-based checking device 7" configure a single inspection unit as a whole. Similarly, "the drum 10", "the optoelectronic reflection-based checking device 7'", and "the illumination device 8'" configure another inspection unit.

(D) In the Evidence A No. 3 invention, "in a first position inside the drum 4 we have a camera 5 which makes it possible to check by transmission, and facing this camera outside the drum 4 there is a device 6 for illuminating the sheet on its opposite side relative to the sheet, the sheet continues its travel and arrives so as to face an optoelectronic reflection-based checking device 7 illuminated by devices 8, and the quality check is made as the first drum 4 rotates past the quality checking device 7", "the sheet is taken by a seizing device to the drum 10, and goes past another optoelectronic reflection-based checking device 7', the sheet being illuminated by an illumination device 8', and the quality check is also carried out", and "next, the sheet is taken up by a chain transfer device 18". Therefore, the camera 5 checks by transmission, and the optoelectronic reflection-based checking device 7 checks one side of the sheet, and another optoelectronic reflection-based checking device 7' checks another side of the sheet. After all the checks including the check of another side of the sheet have been completed, the sheet is taken up by the chain transfer device 18.

Here, it is conceivable that "checking by transmission" by the camera inside the drum 4 is technically the same as the inspection by the positive transparency since the object sheet is "papers of value, such as security papers and bank notes" according to Evidence A No. 3(A).

All of "The camera 5", "the optoelectronic reflection-based checking device 7", and "another optoelectronic reflection-based checking device 7'" in the Evidence A No. 3 invention and "the first linear camera", "the second linear camera", and "the third linear camera" in the Invention 13 are "inspection devices" in common.

(E) In the Evidence A No. 3 invention, "the sheet is taken up by a drum 4, the sheet continues its travel, the quality check is made as the first drum 4 rotates, and after that, the sheet is taken by a seizing device to the drum 10, and goes past another optoelectronic reflection-based checking device 7', and the quality check is carried out". Therefore, it can be said that the sheet is transferred by the drums 4 and 10 at the time of quality check.

All of "the drum 4" and "the drum 10" in the Evidence A No. 3 invention and

"the first inspection cylinder", "the second inspection cylinder", and "the third inspection cylinder" in the Invention 13 are "inspection cylinders" in common.

(F) According to the above (C) to (E), the expression such that "including a feed device 1 for successively feeding the sheets of paper is included, and these sheets enter a transfer drum 3 via a feed roll 2 and are taken up by a drum 4 driven in rotation in the direction of the arrow F1,

in a first position inside the drum 4 we have a camera 5 which makes it possible to check by transmission, and facing this camera outside the drum 4 there is a device 6 for illuminating the sheet on its opposite side relative to the sheet, the sheet continues its travel and arrives so as to face an optoelectronic reflection-based checking device 7 illuminated by devices 8, and the quality check is made as the first drum 4 rotates past the quality checking device 7,

thereafter, when the sheet arrives at the point of contact between the drum 4 and a drum 10, the sheet is taken by a seizing device to the drum 10, and goes past another optoelectronic reflection-based checking device 7', the sheet being illuminated by an illumination device 8', and the quality check is also carried out" in the Evidence A No. 3 invention and the expression such that "successive printed sheets are transferred from a feeder to a first inspection unit in which a first inspection by transparency is carried out by a first linear camera for the inspection, and the printed sheets being transported in the first inspection unit by a first inspection cylinder (4);

once the first inspection by the first linear camera is terminated, the printed sheets are transferred to a second inspection unit in which a second inspection of a first side of the printed sheets is carried out, the printed sheets being transported in the second inspection unit by a second inspection cylinder (7);

once the second inspection by the second linear camera is terminated, the printed sheets are transported to a third inspection unit in which a third inspection on a second side of the printed sheets is carried out, the printed sheets are transported in the third inspection unit by a third inspection cylinder (12)" in the Invention 13 have the following common points. The points include that "the printed successive sheets are transferred from the feeder to a single inspection unit of the plurality of pairs of inspection units for the inspection, the printed sheet is transferred to the inspection unit where the inspection by the inspection cylinder of the inspection unit, in which the inspection is carried out, is carried out,

the inspection carried out by the inspection device in the plurality of pairs of

inspection units includes an inspection by the positive transparency, an inspection of a first side of the printed sheet, and an inspection of a second side of the printed sheet,

the printed sheet is transferred to the next inspection unit after the inspection by the single inspection unit, the inspection of the printed sheet is carried out by the inspection device, and the printed sheet is transferred to the inspection unit where the inspection by the inspection cylinder of the inspection unit, in which the inspection is carried out, is carried out".

(G) Since "when the sheet arrives at the point of contact between the drum 4 and a drum 10, the sheet is taken by a seizing device to the drum 10" in the Evidence A No. 3 invention, the printed sheet is transferred directly from the drum 4 to the drum 10. Also, from FIG. 1 of Evidence A No. 3, it can be recognized that the transfer drum 3 and the transfer roll 11 are in contact with the drum 4 and the drum 10, respectively, such that the printed sheet is transferred directly between the individual cylinders respectively in the Evidence A No. 3 invention.

According to (A) to (G) above, corresponding features and different features between the Invention 13 and the Evidence A No. 3 invention are as follows.

(Corresponding feature)

An inspection process for a printed matter in the form of printed sheet such as valuable securities, paper money, bank notes, a passport, and other similar paper, wherein the process comprises the following steps:

successive printed sheets are transferred from a feeder to a single inspection unit of a plurality of pairs of inspection units for an inspection, and the printed sheets are transferred to the inspection unit where the inspection by the inspection cylinder of the inspection unit, in which the inspection is carried out, is carried out, the inspection carried out by the inspection device in the plurality of pairs of inspection units includes an inspection by the positive transparency, an inspection of a first side of the printed sheet, and an inspection of a second side of the printed sheet;

once the inspection by the single inspection unit is terminated, the printed sheets are transferred to the next inspection unit, the inspection of the printed sheet is carried out by the inspection device, and the printed sheet is transferred to the inspection unit where the inspection by the inspection cylinder of the inspection unit, in which the inspection is carried out, is carried out;

once inspections by all the inspection devices are terminated, the printed sheets are transferred to a marking unit and are marked as defective if one of the results

indicates a defect; and

once marking has been performed, the printed sheets are transported in a delivery unit and sorted in delivery piles depending on whether or not the printed sheets are marked as being defective, and transfer of the printed sheets from the inspection unit to another inspection unit are made directly from the inspection cylinder to another inspection cylinder.

(Different feature 13-1)

The point that, while the number of sets of the plurality of sets of inspection units is three and the inspection device provided in each inspection unit is a linear camera in the Invention 13, the number of sets of inspection units is two and whether or not the inspection device provided in each inspection unit is a linear camera is not clear in the Evidence A No. 3 invention.

(Different feature 13-2)

The point that, while the printed sheet is transferred to the next inspection unit or a marking unit after the inspection in each inspection unit is terminated in the Invention 13, whether or not the printed sheet is transferred to the next inspection unit or the marking unit after the inspection is terminated is not clear though it is after the inspection by the inspection device in each inspection unit.

13-2 Judgement

(1) Regarding the different feature 13-1

a. The demandant's allegation brief

The demandant alleges, in page 25 of the written demand for trial, that, when an inspection process according to the 13th patent invention and a sheet processing procedure executed in the device described in Evidence A No. 3 are compared, while the first inspection and the second inspection are performed on different cylinders respectively in the 13th patent invention, the first inspection and the second inspection are performed on the same drum 4 in Evidence A No. 3, and since performing one inspection on one cylinder is well-known as is also described in Evidence A No. 1 and Evidence A No. 2 or the like, it is very easy to change to perform the individual steps on the different cylinders as in Evidence A No. 3.

b. The demandee's allegation brief

The demandee alleges the following in page 29 of the written reply.

The demandant's allegation that it is very easy to change to perform the individual steps on the different cylinders as in Evidence A No. 3 since performing one inspection on one cylinder is well-known as is also described in Evidence A No. 1 and Evidence A No. 2 or the like is improper.

In Evidence A No. 3, it is not described or suggested that the inspection camera is a linear camera. Also, "there are three inspection cylinders and the inspection of the positive transparency is performed in the first cylinder" in the 13th patent invention, and it is radically different from the configuration of Evidence A No. 3 that there are two inspection cylinders, the positive transparency and the front side of paper money for example are inspected in the first cylinder and the reverse side of the paper money for example is inspected in the second cylinder. Note that, in the configuration of the patent of the case, the inspection of the positive transparency is possible in the first cylinder or the third cylinder.

c. Judgement on the body

Regarding the different feature 13-1, it is practically no different from the different feature 1-1, and the different feature can be easily arrived at by a person skilled in the art similarly to 1. 1-2 (1) c.. That is, changing two sets of inspection units to three sets in the Evidence A No. 3 invention is the matter that a person skilled in the art can appropriately implement in consideration of an inspection purpose and an inspection object, and also what kind of camera is to be used as a camera for an inspection of an inspection device is the design matter that a person skilled in the art can appropriately select in consideration of an inspection purpose and an inspection object, selection of the linear camera used in the Evidence A No. 4 and No. 5 inventions as the camera for taking images of a sheet which is the inspection object can be appropriately implemented by a person skilled in the art.

Therefore, attaining the configuration according to the different feature 13-1 by providing three sets of inspection units composed of an inspection cylinder and an inspection device in the Evidence A No. 3 invention and applying the Evidence A No. 4 invention and the Evidence A No. 5 invention to the Evidence A No. 3 invention could be easily implemented by a person skilled in the art.

(2) Regarding the different feature 13-2

a. The demandant's allegation brief

The demandant alleges the following, in page 25 of the written demand for trial.

While the sheet is transported to the next cylinder after each inspection is terminated as specified by the constituent component in the 13th patent invention, it is not specified whether the transfer from the first drum 4 to the second drum 10 is performed after the inspection of the sheet by the optoelectronic reflection-based checking device 7 is terminated in Evidence A No. 3. However, performing the transfer to the next cylinder after the inspection of the sheet is terminated is well-known as it is described that "Only after all the individual images or the whole image of the sheet is recorded, the sheet is transferred to the second drum 18 for inspecting the front side 2 of the sheet." (page 9, lines 4 to 6) in Evidence A No. 2.

b. The demandee's allegation brief

The demandee's allegation for the different feature 13-2 is similar to the allegation in the different feature 13-1.

c. Judgement on the body

Regarding the different feature 13-2, it is practically no different from the different feature 1-3, and there is a reason similar to 1. 1-2 (3) c.

In the Evidence A No. 3 invention, the printed sheet is transferred to the next inspection unit or the marking unit after the inspection by the inspection device in each inspection unit.

Then, the Evidence A No. 2 invention has the configuration that "a device for qualitative assessment of a printed sheet 1 comprising an inspection device configured from a drum 17 that conveys the printed sheet 1, and an illumination device 32 and a CCD area camera 34 that record an image of the sheet 1 that lies on the drum 17, and an inspection device configured from a drum 18 that conveys the printed sheet 1, and an illumination device 33 and a CCD area camera 36 that record an image of the sheet 1 that lies on the drum 18, wherein only after all individual images or a whole image of a reverse side 3 of the sheet 1 that lies on the drum 17 is recorded, the sheet 1 is transferred to the second drum 18 for inspecting a front side 2 of the sheet 1, and only after the whole image of the sheet 1 that lies on the drum 18 is detected, a starting end of the sheet 1 is transferred to chain gripper devices 21 of a third chain conveyor 19." It is conceivable that the Evidence A No. 2 invention adopts the configuration of transferring the sheet to the succeeding drum or a conveyor only after the whole image of the sheet is recorded, in order to improve accuracy of the transfer of the sheet that lies on the drum, thereby improving the accuracy of the processing of the sheet. If so, the Evidence A No. 3 invention and

the Evidence A No. 2 invention are the inventions belonging to the same technical field related to a device that inspects a sheet conveyed by an inspection cylinder or drum using a camera for an inspection, and improvement of the accuracy of the processing of the sheet wound around a peripheral surface of an inspection cylinder is not only a general aim in the inspection device but also needed as the inspection device is to be miniaturized.

Therefore, in the Evidence A No. 3 invention, applying the configuration of the Evidence A No. 2 invention and transferring the printed sheet to the next inspection unit or the marking unit after the inspection in each inspection unit is terminated can be easily arrived at by a person skilled in the art.

(4) Summary

Then, effects of the Invention 13 could be easily predicted by a person skilled in the art with the Evidence A No. 2 to Evidence A No. 5 inventions, and are not special.

As described above, the Invention 13 could be easily invented by a person skilled in the art based on the Evidence A No. 2 to Evidence A No. 5 inventions.

14. Regarding the Invention 14

The Invention 14 corresponds to the one for which the matter specifying the invention that is "the second and/or third inspection includes inspection of visible and/or non-visible features on the printed sheets" is added further to the Invention 13.

14-1 Comparison

It is clear that the camera 5 and optoelectronic reflection-based checking devices 7 and 7' in the Evidence A No. 3 invention perform the inspection by visible features.

When the Invention 14 and the Evidence A No. 3 invention are compared, both are different at the above-described different features 13-1 and 13-2, and are further different at the following point.

(Different feature 14)

The point that, while the second and/or third inspection includes inspection of visible and/or non-visible features on the printed sheets in the Invention 14, in the Evidence A No. 3 invention, though the inspection of the visible features on the

printed sheet is performed, the other configuration is not clear.

14-2 Judgement

(1) Regarding the different feature 14

The Evidence A No. 4 invention describes "An infrared ray printed matter checking device in which a light quantity of the infrared LED of each line sensor 3 is determined in the detecting process, the security sheet 14 is supplied for printing. When the sheet 14 is printed during conveyance by the impression cylinder 13 and continuously conveyed as having contact with the impression cylinder, an image of the detected object of the printed sheet 14 is taken by the each line sensor 3.". Then, since an infrared inspection is a general inspection technology as a non-visible inspection, it can be said that the infrared ray printed matter checking device in the Evidence A No. 4 invention is a non-visible feature inspection unit.

Also, both of the Evidence A No. 3 invention and the Evidence A No. 4 invention are the inventions belonging to the same technical field related to a device that inspects a sheet conveyed by an inspection cylinder or drum using a camera for an inspection. Also, for a reason similar to the judgement in 1. 1-2 (1) c. A described above, changing two sets of inspection units to three sets in the Evidence A No. 3 invention is the matter that a person skilled in the art can appropriately implement in consideration of an inspection purpose and an inspection object.

Therefore, including such an inspection of the non-visible features in the second sheet inspection and the third sheet inspection in the Evidence A No. 3 invention can be appropriately implemented by a person skilled in the art in consideration of an inspection purpose and an inspection object. Also, selecting the inspection including the visible features and the inspection of the non-visible features according to an inspection object and an inspection purpose can be appropriately implemented by a person skilled in the art.

Therefore, attaining the configuration according to the different feature 14 by providing three sets of inspection units and applying the non-visible feature inspection of the Evidence A No. 4 invention in the Evidence A No. 3 invention could be easily implemented by a person skilled in the art.

(2) Summary

Then, effects of the Invention 14 could be easily predicted by a person skilled in the art with the Evidence A No. 2 to Evidence A No. 5 inventions, and are not special.

As described above, the Invention 14 could be easily invented by a person skilled in the art based on the Evidence A No. 2 to Evidence A No. 5 inventions.

15. Regarding the Invention 15

The Invention 15 corresponds to the one for which the matter specifying the invention that is "the diameter of each inspection cylinder is minimized for minimal transport and inspection time" is added further to the Invention 13.

15-1 Comparison

When the Invention 15 and the Evidence A No. 3 invention are compared, both are different at the above-described different features 13-1 and 13-2, and are further different at the following point.

(Different feature 15)

The point that, while the diameter of each inspection cylinder is minimized for minimal transport and inspection time in the Invention 15, the diameter of the inspection cylinder is not clear in the Evidence A No. 3 invention.

15-2 Judgement

(1) Regarding the different feature 15

The problem of miniaturization and weight reduction of a machine and a device itself is not just a general problem, and the necessity of the miniaturization of each inspection unit is naturally generated as the number of sets of the inspection units is increased in the Evidence A No. 3 invention. Therefore, for the miniaturization of the inspection unit, miniaturizing the diameter of the inspection cylinder which is a component and minimizing it for the minimum transport and inspection time is the design matter that a person skilled in the art can appropriately implement.

Therefore, attaining the configuration according to the different feature 15 in the Evidence A No. 3 invention could be easily implemented by a person skilled in the art.

(2) Summary

Then, effects of the Invention 15 could be easily predicted by a person skilled in the art with the Evidence A No. 2 to Evidence A No. 5 inventions, and are not special.

As described above, the Invention 15 could be easily invented by a person skilled in the art based on the Evidence A No. 2 to Evidence A No. 5 inventions.

16. Regarding the Invention 16

The Invention 16 corresponds to the one for which the matter specifying the invention that is "comprising a step of arranging the first to third inspection cylinders in such a manner that a transport length of a printed sheet on each inspection cylinder, between an input location where the printed sheet is transferred onto the inspection cylinder and an output location where the printed sheet is transferred away from the inspected cylinder, is optimized for a predetermined sheet length" is added further to the Invention 13.

16-1 Comparison

When the Invention 16 and the Evidence A No. 3 invention are compared, both are different at the above-described different features 13-1 and 13-2, and are further different at the following point.

(Different feature 16)

The point that, while a step of arranging the first to third inspection cylinders in such a manner that a transport length of a printed sheet on each inspection cylinder, between an input location where the printed sheet is transferred onto the inspection cylinder and an output location where the printed sheet is transferred away from the inspected cylinder, is optimized for a predetermined sheet length is included in the Invention 16, it is not clear for such a configuration in the Evidence A No. 3 invention.

16-2 Judgement

(1) Regarding the different feature 16

For a reason similar to the judgement in 1. 1-2 (1) c. A described above, changing two sets of inspection units to three sets in the Evidence A No. 3 invention is the design matter that a person skilled in the art can appropriately select in consideration of an inspection purpose and an inspection object. Then, as the number of sets of the inspection units is increased in the Evidence A No. 3 invention, the necessity of the miniaturization of each inspection unit is naturally generated. Including a step of arranging the first, second and third inspection cylinders so as to

optimize, as a predetermined sheet length, a transport length of the printed sheet on each inspection cylinder between an input location to transfer the printed sheet to the inspection cylinder and an output location to take out and transfer the printed sheet from the inspection cylinder for the miniaturization of the inspection unit is only the design matter related to the transport length of the printed sheet on each cylinder.

Therefore, attaining the configuration according to the different feature 16 in the Evidence A No. 3 invention could be easily implemented by a person skilled in the art.

(2) Summary

Then, effects of the Invention 16 could be easily predicted by a person skilled in the art with the Evidence A No. 2 to Evidence A No. 5 inventions, and are not special.

As described above, the Invention 16 could be easily invented by a person skilled in the art based on the Evidence A No. 2 to Evidence A No. 5 inventions.

17. Regarding the Invention 17

The Invention 17 corresponds to the one for which the matter specifying the invention that is "the transport length of the printed sheet on the inspection cylinder is selected to be slightly greater than the length of the printed sheet to be inspected" is added further to the Invention 16.

17-1 Comparison

When the Invention 17 and the Evidence A No. 3 invention are compared, both are different at the above-described different features 13-1, 13-2 and 16, and are further different at the following point.

(Different feature 17)

The point that, while the transport length of the printed sheet on the inspection cylinder is selected to be slightly greater than the length of the printed sheet to be inspected in the Invention 17, no such a configuration is specified in the Evidence A No. 3 invention.

17-2 Judgement

(1) Regarding the different feature 17

In the Evidence A No. 3 invention, since the printed sheet is transferred to the next inspection unit or the marking unit after the inspection by the inspection device in each inspection unit, it is conceivable that it is usual to understand that the sheet is transferred between the individual inspection cylinders after the inspection in the cylinder is completed. Then, as judged in 1. 1-2 (1) c. A described above, changing two sets of inspection units to three sets in the Evidence A No. 3 invention is the matter that a person skilled in the art can appropriately implement in consideration of an inspection purpose and an inspection object.

If so, it is natural to make the transport length of the printed sheet on the first inspection cylinder (4), the second inspection cylinder (7) or the third inspection cylinder (12) longer than the length of the printed sheet to be inspected, and in the Evidence A No. 3 invention, in order to miniaturize the inspection unit as the number of sets of inspection units is increased, making it slightly long without making it longer than needed in consideration of the inspection efficiency could be easily arrived at by a person skilled in the art.

Therefore, attaining the configuration according to the different feature 17 in the Evidence A No. 3 invention could be easily implemented by a person skilled in the art.

(2) Summary

Then, effects of the Invention 17 could be easily predicted by a person skilled in the art with the Evidence A No. 2 to Evidence A No. 5 inventions, and are not special.

As described above, the Invention 17 could be easily invented by a person skilled in the art based on the Evidence A No. 2 to Evidence A No. 5 inventions.

18. Regarding the Invention 18

The Invention 18 corresponds to the one for which the matter specifying the invention that is "the first to third inspections include synchronizing operation of a linear camera that takes successive linear images of the printed sheet being inspected with the sheet transport on the associated inspection cylinder" is added further to the Invention 13.

18-1 Comparison

When the Invention 18 and the Evidence A No. 3 invention are compared, both

are different at the above-described different features 13-1 and 13-2, and are further different at the following point.

(Different feature 18)

The point that, while the first to third inspections include synchronizing operation of a linear camera that takes successive linear images of the printed sheet being inspected with the sheet transport on the associated inspection cylinder in the Invention 18, no such a configuration is specified in the Evidence A No. 3 invention.

18-2 Judgement

(1) Regarding the different feature 18

As judged in 1. 1-2 (1) c. described above, providing three sets of inspection units composed of an inspection cylinder and an inspection device in the Evidence A No. 3 invention, applying the Evidence A No .4 invention and the Evidence A No. 5 invention to the Evidence A No. 3 invention and attaining the configuration according to the different feature 1-1, that is, turning the number of sets of the plurality of sets of sheet inspection units to three and turning the camera provided in each sheet inspection unit to a linear camera, could be easily implemented by a person skilled in the art. Then, it is technical common sense that the linear camera takes successive linear images of the printed sheets to be inspected and needs to be synchronized with sheet transport.

Therefore, attaining the configuration according to the different feature 18 by applying the Evidence A No. 4 invention and the Evidence A No. 5 invention to the Evidence A No. 3 invention could be easily implemented by a person skilled in the art.

(2) Summary

Then, effects of the Invention 18 could be easily predicted by a person skilled in the art with the Evidence A No. 2 to Evidence A No. 5 inventions, and are not special.

As described above, the Invention 18 could be easily invented by a person skilled in the art based on the Evidence A No. 2 to Evidence A No. 5 inventions.

No. 7 Conclusion

As described above, since the demandee should not be granted patents for

Inventions 1 and 3-18 in accordance with the provisions of Article 29(2) of the Patent Act, the patent according to the Inventions 1and 3-18 falls under Article 123(1)(ii) of the Patent Act, and should be invalidated by Reason 1 for invalidation.

Also, the patent according to the Invention 2 cannot be invalidated by Reasons 1 and 2 for invalidation alleged and means of proof submitted by the demandant.

Of the costs in connection with the trial, one-eighteenth shall be borne by the demandant, and seventeen-eighteenth 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 10, 2014

Chief administrative judge: HONGO, Toru
Administrative judge: HASUI, Masayuki
Administrative judge: YOKOBAYASHI, Shujiro