US 20170255622A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2017/0255622 A1**

ARAI et al. (43) **Pub. Date: Sep. 7, 2017**

(54) **FILE RECONSTRUCTION DEVICE AND NON-TRANSITORY COMPUTER READABLE STORAGE MEDIUM**

(71) Applicant: **FUJI XEROX CO., LTD.**, Tokyo (JP)

(72) Inventors: **Hirotaka ARAI**, Kanagawa (JP); **Satoshi KOJIMA**, Kanagawa (JP); **Morihiro KAMEDA**, Kanagawa (JP); **Yoshinori SATO**, Kanagawa (JP)

(73) Assignee: **FUJI XEROX CO., LTD.**, Tokyo (JP)

(21) Appl. No.: **15/208,676**

(22) Filed: **Jul. 13, 2016**

(30) **Foreign Application Priority Data**

Mar. 3, 2016 (JP) 2016-041128

Publication Classification

(51) **Int. Cl.**

G06F 17/30	(2006.01)
G06K 9/00	(2006.01)
H04N 1/00	(2006.01)

(52) **U.S. Cl.**

CPC ***G06F 17/3012*** (2013.01); ***H04N 1/00891*** (2013.01); ***G06K 9/00456*** (2013.01); ***G06F 17/30082*** (2013.01); *H04N 2201/0094* (2013.01)

(57) **ABSTRACT**

A file reconstruction device includes an extraction unit and a creation unit. The extraction unit extracts pages conforming to a predetermined condition, from an input file including plural pages. The creation unit creates an output file including the two or more conforming pages extracted from the input file by the extraction unit.

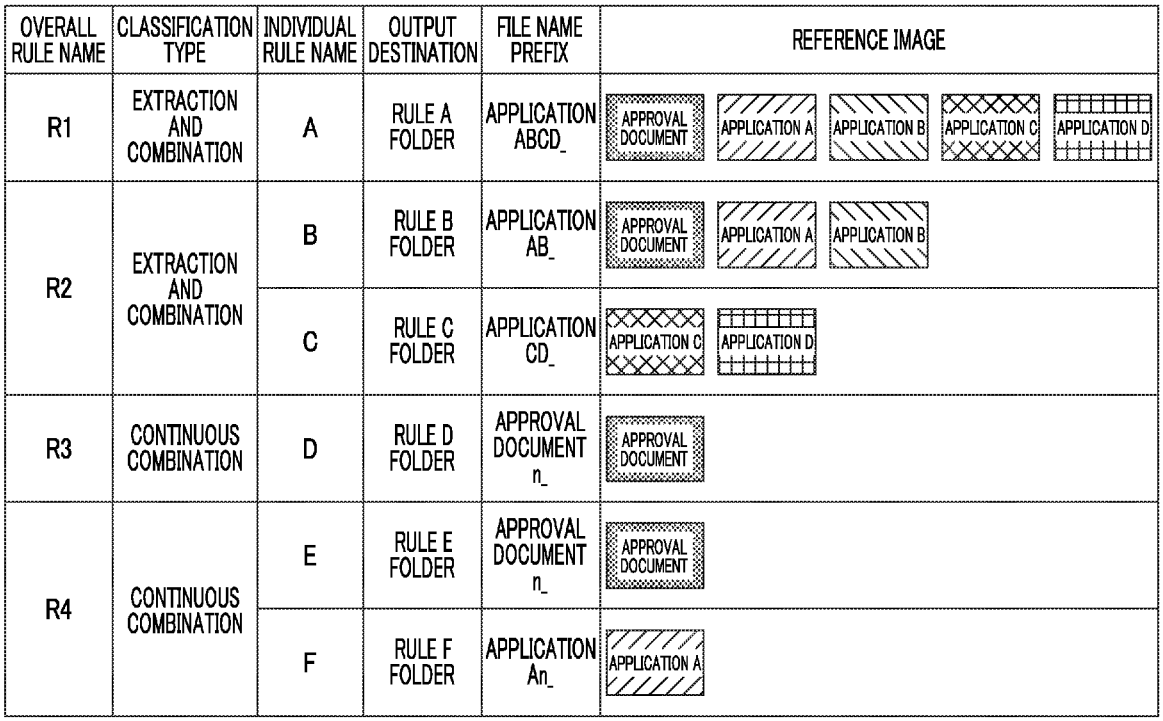


FIG. 1

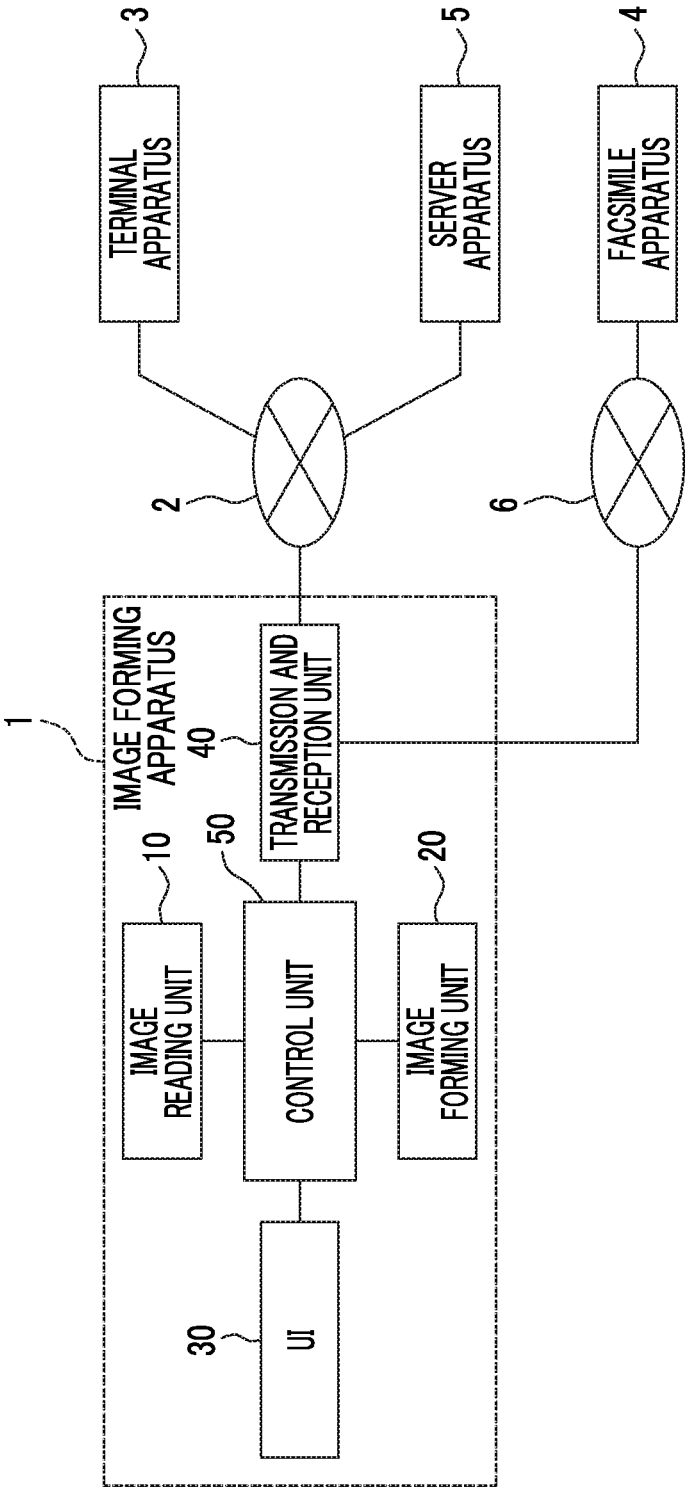

3
TERMINAL APPARATUS
5
SERVER APPARATUS
4
FACSIMILE APPARATUS
2
6
1
IMAGE FORMING APPARATUS
40
TRANSMISSION AND RECEPTION UNIT
10
IMAGE READING UNIT
50
CONTROL UNIT
20
IMAGE FORMING UNIT
30
UI

FIG. 2

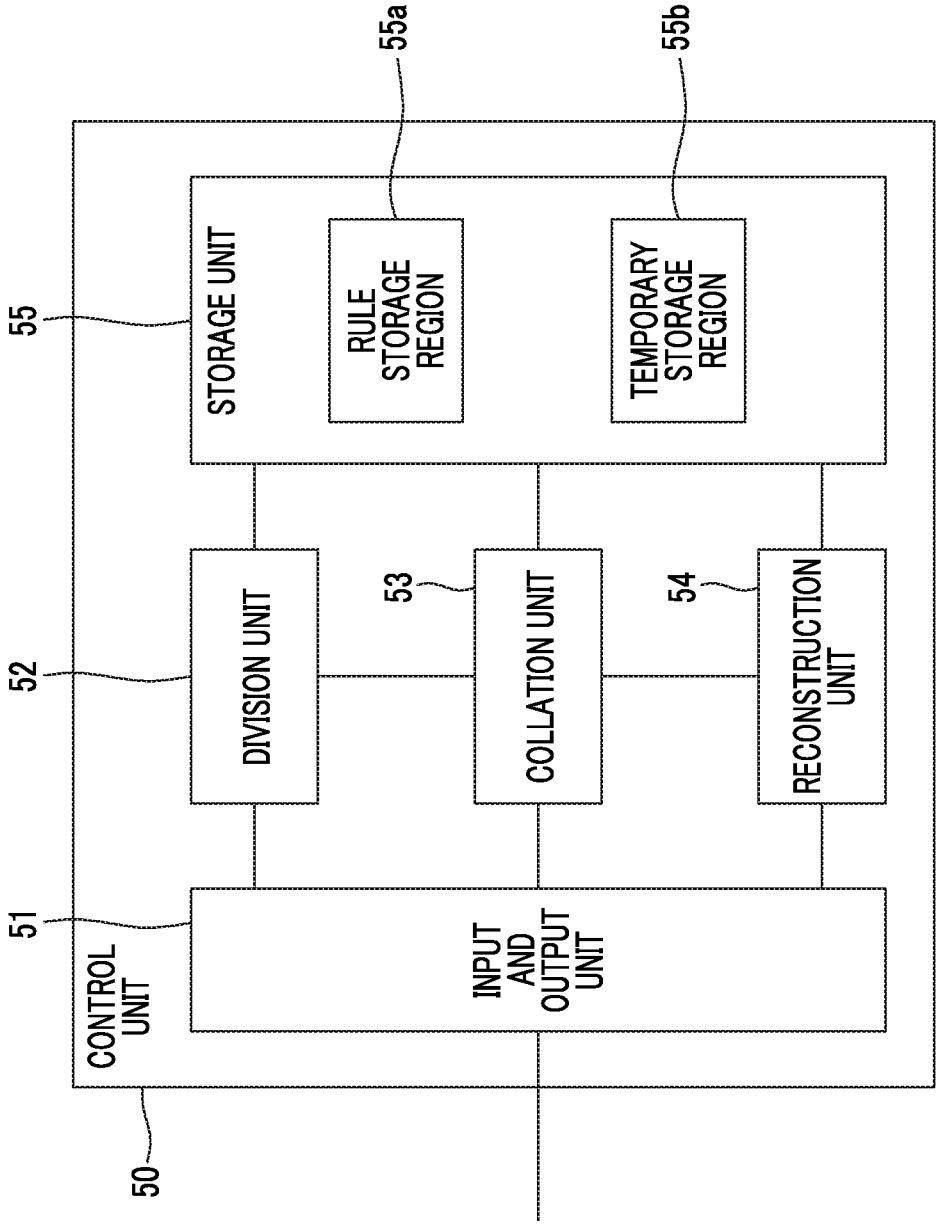

55a
55b
55
STORAGE UNIT
RULE STORAGE REGION
TEMPORARY STORAGE REGION
52
DIVISION UNIT
53
COLLATION UNIT
54
RECONSTRUCTION UNIT
51
INPUT AND OUTPUT UNIT
CONTROL UNIT
50

FIG. 3

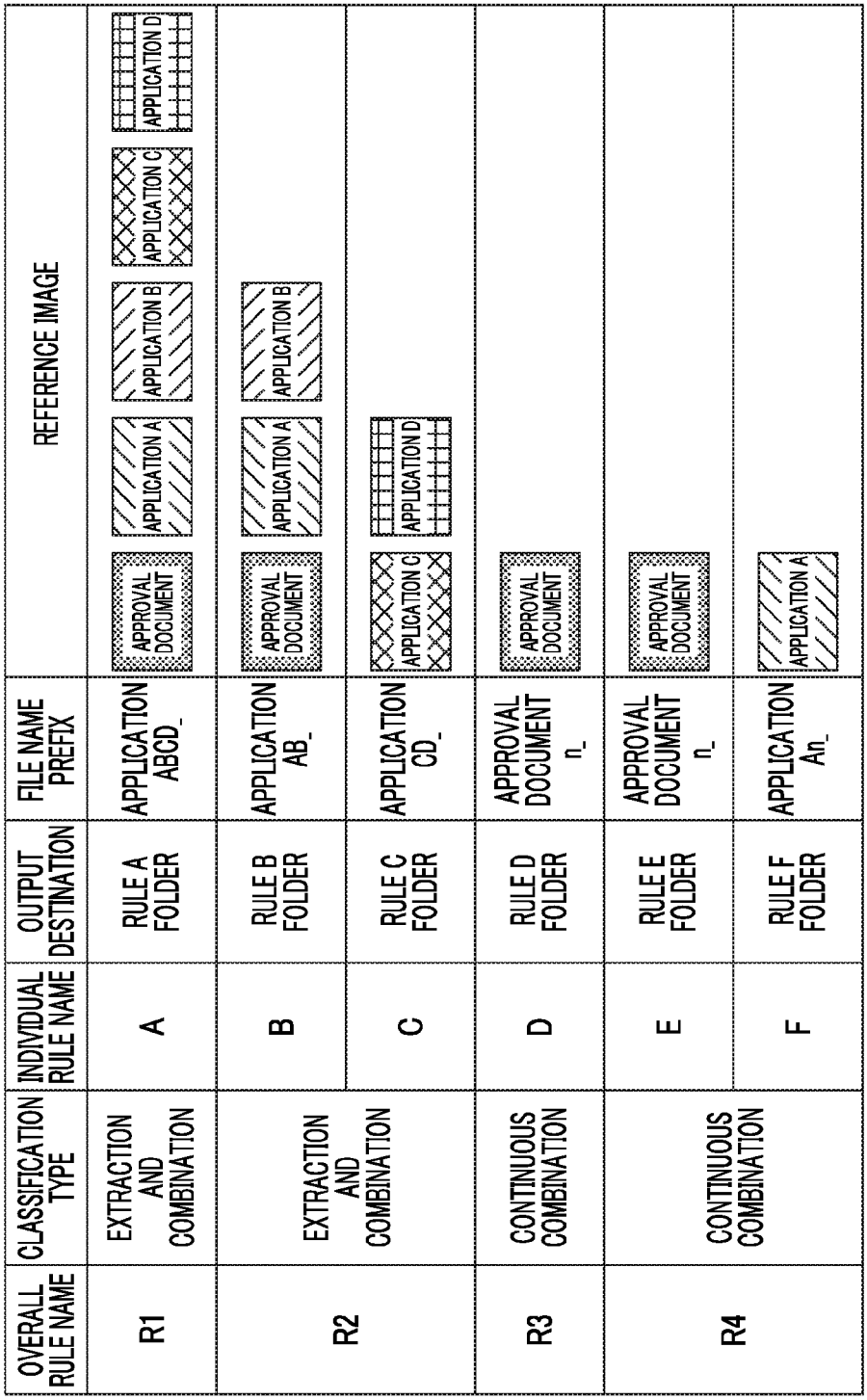

OVERALL RULE NAME
CLASSIFICATION TYPE
INDIVIDUAL RULE NAME
OUTPUT DESTINATION
FILE NAME PREFIX
REFERENCE IMAGE
R1
EXTRACTION AND COMBINATION
A
RULE A FOLDER
APPLICATION ABCD_
APPROVAL DOCUMENT
APPLICATION A
APPLICATION B
APPLICATION C
APPLICATION D
R2
EXTRACTION AND COMBINATION
B
RULE B FOLDER
APPLICATION AB_
APPROVAL DOCUMENT
APPLICATION A
APPLICATION B
C
RULE C FOLDER
APPLICATION CD_
APPLICATION C
APPLICATION D
R3
CONTINUOUS COMBINATION
D
RULE D FOLDER
APPROVAL DOCUMENT n_
APPROVAL DOCUMENT
R4
CONTINUOUS COMBINATION
E
RULE E FOLDER
APPROVAL DOCUMENT n_
APPROVAL DOCUMENT
F
RULE F FOLDER
APPLICATION An_
APPLICATION A

FIG. 4

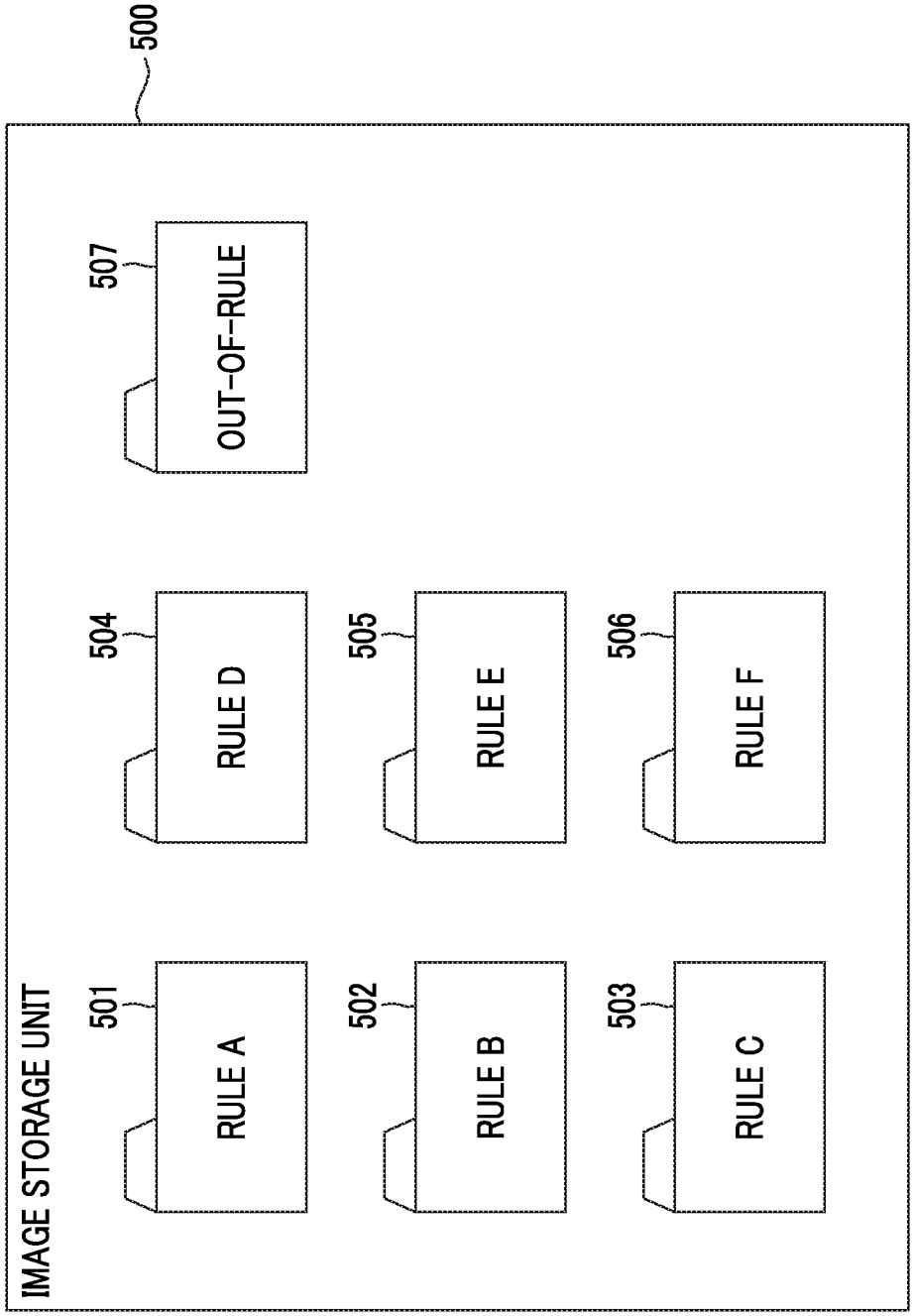

500
IMAGE STORAGE UNIT
501
RULE A
502
RULE B
503
RULE C
504
RULE D
505
RULE E
506
RULE F
507
OUT-OF-RULE

FIG. 5A FIG. 5B FIG. 5C FIG. 5D FIG. 5E

FIG. 5AFIG. 5B FIG. 5CFIG. 5DFIG. 5E

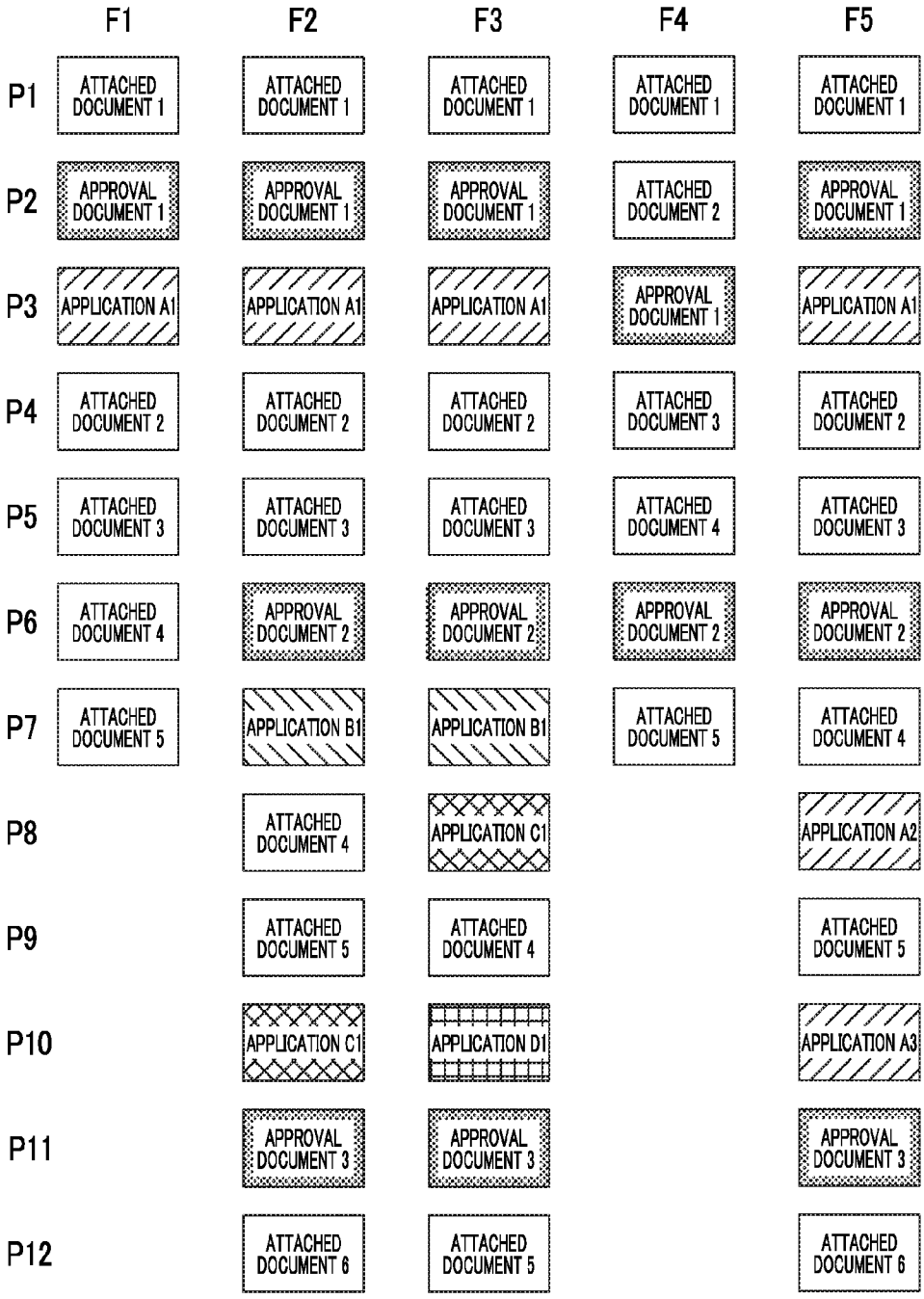


FIG. 6

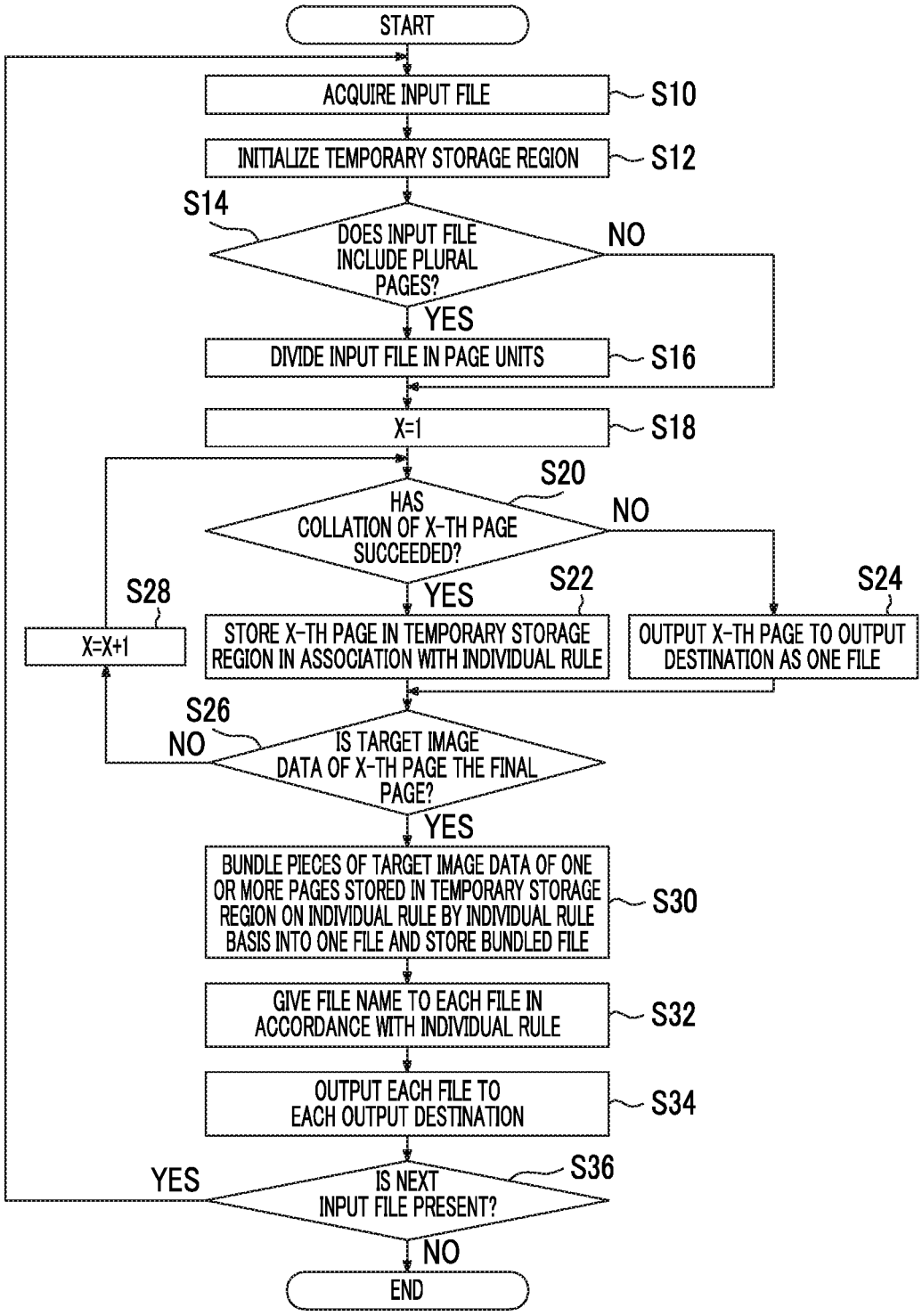

START
ACQUIRE INPUT FILE
S10
INITIALIZE TEMPORARY STORAGE REGION
S12
S14
DOES INPUT FILE INCLUDE PLURAL PAGES?
NO
YES
DIVIDE INPUT FILE IN PAGE UNITS
S16
X=1
S18
S20
HAS COLLATION OF X-TH PAGE SUCCEEDED?
NO
YES
S22
STORE X-TH PAGE IN TEMPORARY STORAGE REGION IN ASSOCIATION WITH INDIVIDUAL RULE
S24
OUTPUT X-TH PAGE TO OUTPUT DESTINATION AS ONE FILE
S28
X=X+1
S26
NO
IS TARGET IMAGE DATA OF X-TH PAGE THE FINAL PAGE?
YES
BUNDLE PIECES OF TARGET IMAGE DATA OF ONE OR MORE PAGES STORED IN TEMPORARY STORAGE REGION ON INDIVIDUAL RULE BY INDIVIDUAL RULE BASIS INTO ONE FILE AND STORE BUNDLED FILE
S30
GIVE FILE NAME TO EACH FILE IN ACCORDANCE WITH INDIVIDUAL RULE
S32
OUTPUT EACH FILE TO EACH OUTPUT DESTINATION
S34
S36
YES
IS NEXT INPUT FILE PRESENT?
NO
END

FIG. 7

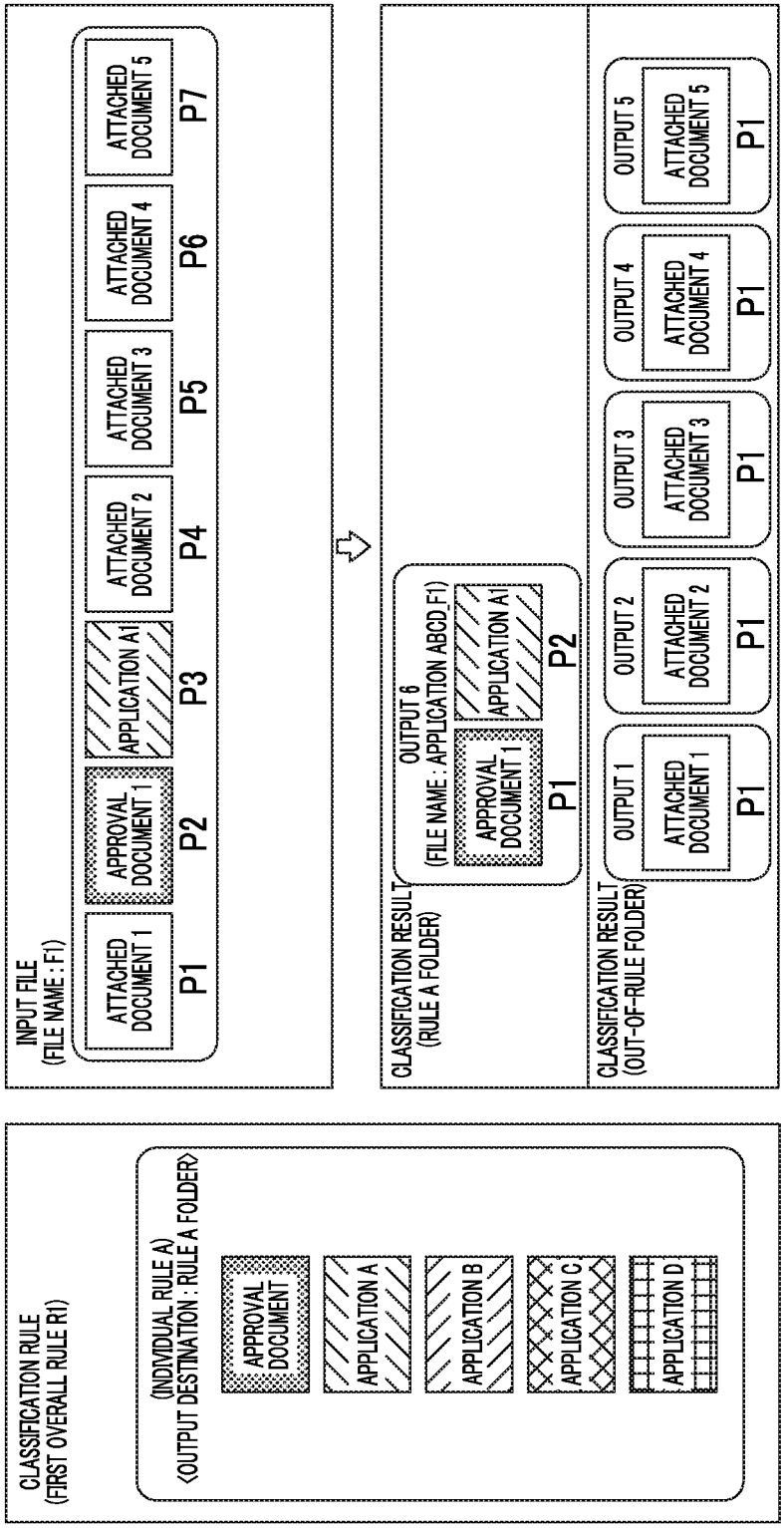

CLASSIFICATION RULE
(FIRST OVERALL RULE R1)
(INDIVIDUAL RULE A)
<OUTPUT DESTINATION : RULE A FOLDER>
APPROVAL DOCUMENT
APPLICATION A
APPLICATION B
APPLICATION C
APPLICATION D
INPUT FILE
(FILE NAME : F1)
ATTACHED DOCUMENT 1
P1
APPROVAL DOCUMENT 1
P2
APPLICATION A1
P3
ATTACHED DOCUMENT 2
P4
ATTACHED DOCUMENT 3
P5
ATTACHED DOCUMENT 4
P6
ATTACHED DOCUMENT 5
P7
CLASSIFICATION RESULT
(RULE A FOLDER)
OUTPUT 6
(FILE NAME : APPLICATION ABCD_F1)
APPROVAL DOCUMENT 1
APPLICATION A1
P1
P2
CLASSIFICATION RESULT
(OUT-OF-RULE FOLDER)
OUTPUT 1
ATTACHED DOCUMENT 1
P1
OUTPUT 2
ATTACHED DOCUMENT 2
P1
OUTPUT 3
ATTACHED DOCUMENT 3
P1
OUTPUT 4
ATTACHED DOCUMENT 4
P1
OUTPUT 5
ATTACHED DOCUMENT 5
P1

FIG. 8

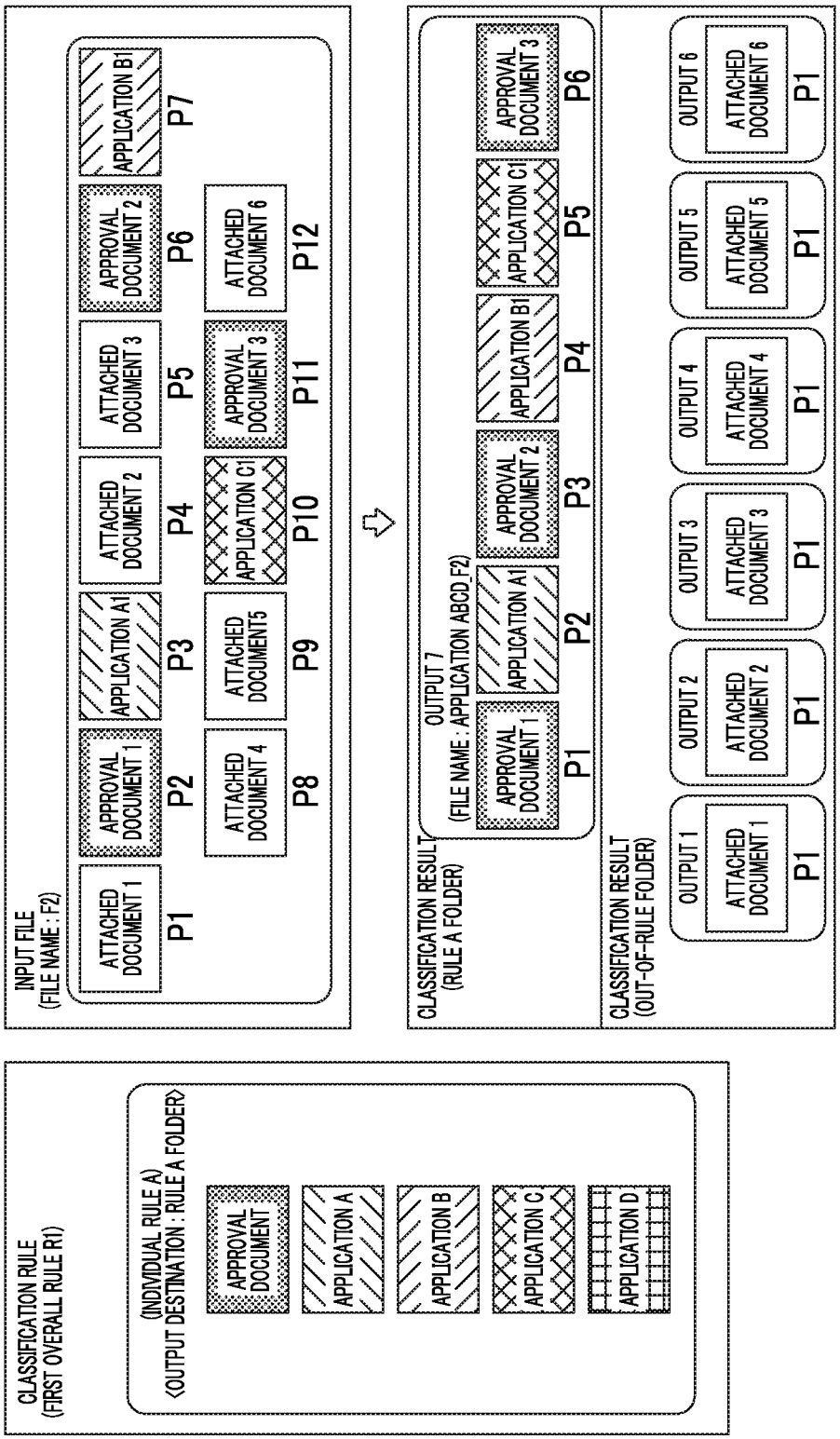

CLASSIFICATION RULE
(FIRST OVERALL RULE R1)
(INDIVIDUAL RULE A)
<OUTPUT DESTINATION : RULE A FOLDER>
APPROVAL DOCUMENT
APPLICATION A
APPLICATION B
APPLICATION C
APPLICATION D
INPUT FILE
(FILE NAME : F2)
ATTACHED DOCUMENT 1
APPROVAL DOCUMENT 1
APPLICATION A1
ATTACHED DOCUMENT 2
ATTACHED DOCUMENT 3
APPROVAL DOCUMENT 2
APPLICATION B1
P1
P2
P3
P4
P5
P6
P7
ATTACHED DOCUMENT 4
ATTACHED DOCUMENT5
APPLICATION C1
APPROVAL DOCUMENT 3
ATTACHED DOCUMENT 6
P8
P9
P10
P11
P12
CLASSIFICATION RESULT
(RULE A FOLDER)
OUTPUT 7
(FILE NAME : APPLICATION ABCD F2)
APPROVAL DOCUMENT 1
APPLICATION A1
APPROVAL DOCUMENT 2
APPLICATION B1
APPLICATION C1
APPROVAL DOCUMENT 3
P1
P2
P3
P4
P5
P6
CLASSIFICATION RESULT
(OUT-OF-RULE FOLDER)
OUTPUT 1
ATTACHED DOCUMENT 1
P1
OUTPUT 2
ATTACHED DOCUMENT 2
P1
OUTPUT 3
ATTACHED DOCUMENT 3
P1
OUTPUT 4
ATTACHED DOCUMENT 4
P1
OUTPUT 5
ATTACHED DOCUMENT 5
P1
OUTPUT 6
ATTACHED DOCUMENT 6
P1

FIG. 9

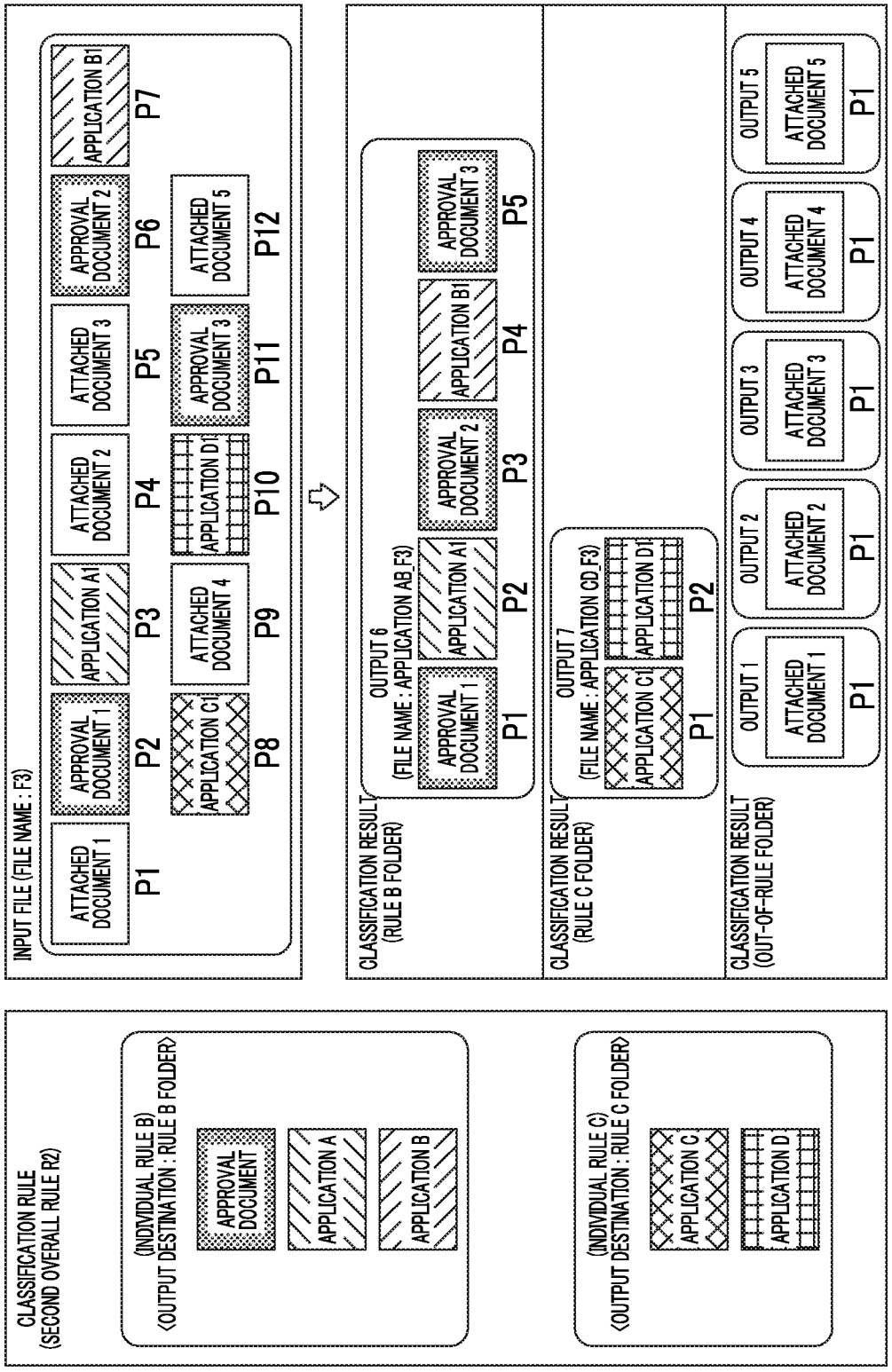

CLASSIFICATION RULE
(SECOND OVERALL RULE R2)
(INDIVIDUAL RULE B)
<OUTPUT DESTINATION : RULE B FOLDER>
APPROVAL DOCUMENT
APPLICATION A
APPLICATION B
(INDIVIDUAL RULE C)
<OUTPUT DESTINATION : RULE C FOLDER>
APPLICATION C
APPLICATION D
INPUT FILE (FILE NAME : F3)
ATTACHED DOCUMENT 1
APPROVAL DOCUMENT 1
APPLICATION A1
ATTACHED DOCUMENT 2
ATTACHED DOCUMENT 3
APPROVAL DOCUMENT 2
APPLICATION B1
P1
P2
P3
P4
P5
P6
P7
APPLICATION C1
ATTACHED DOCUMENT 4
APPLICATION D1
APPROVAL DOCUMENT 3
ATTACHED DOCUMENT 5
P8
P9
P10
P11
P12
CLASSIFICATION RESULT
(RULE B FOLDER)
OUTPUT 6
(FILE NAME : APPLICATION AB_F3)
APPROVAL DOCUMENT 1
APPLICATION A1
APPROVAL DOCUMENT 2
APPLICATION B1
APPROVAL DOCUMENT 3
P1
P2
P3
P4
P5
CLASSIFICATION RESULT
(RULE C FOLDER)
OUTPUT 7
(FILE NAME : APPLICATION CD_F3)
APPLICATION C1
APPLICATION D1
P1
P2
CLASSIFICATION RESULT
(OUT-OF-RULE FOLDER)
OUTPUT 1
ATTACHED DOCUMENT 1
P1
OUTPUT 2
ATTACHED DOCUMENT 2
P1
OUTPUT 3
ATTACHED DOCUMENT 3
P1
OUTPUT 4
ATTACHED DOCUMENT 4
P1
OUTPUT 5
ATTACHED DOCUMENT 5
P1

FIG. 10

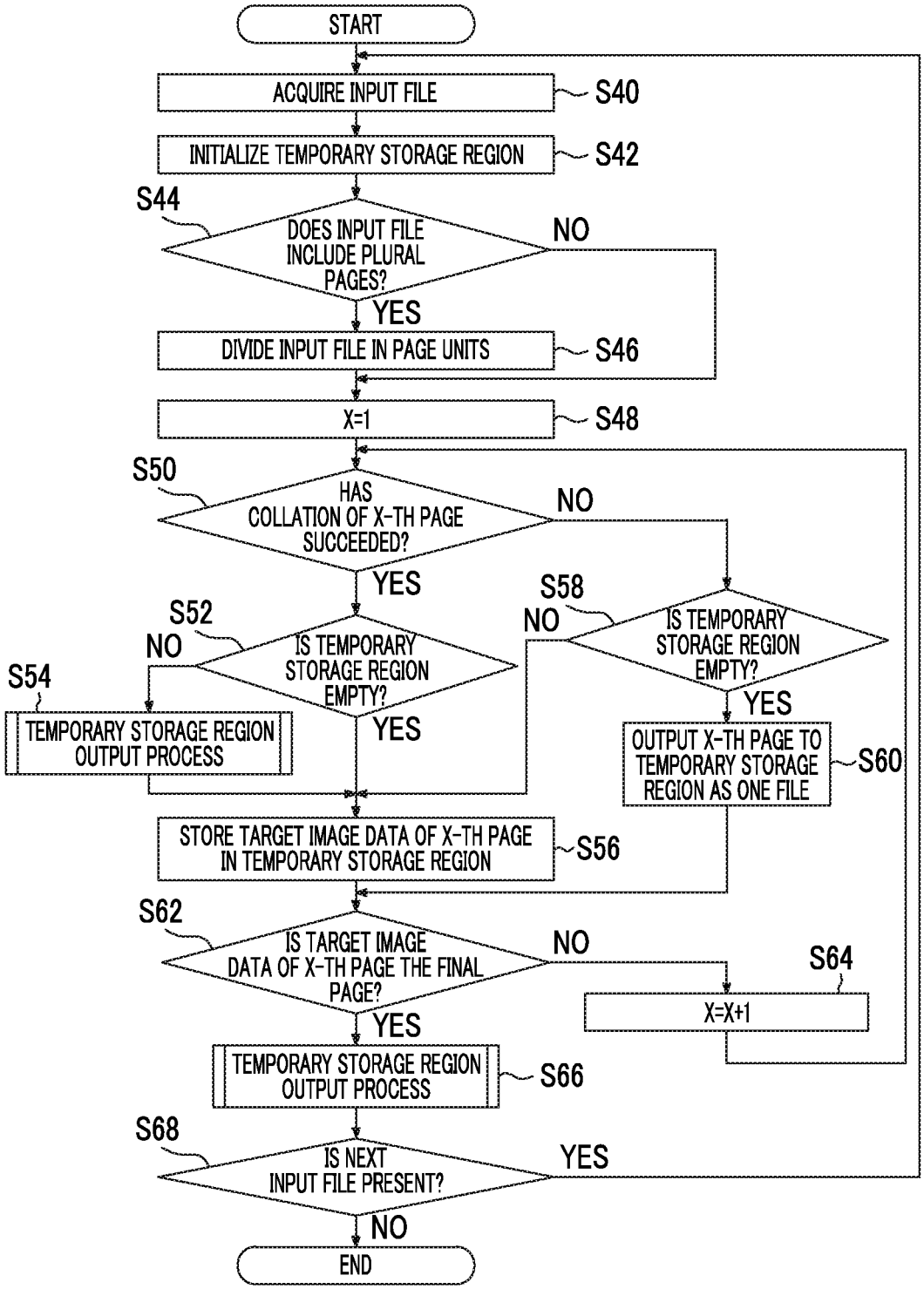

START
ACQUIRE INPUT FILE
S40
INITIALIZE TEMPORARY STORAGE REGION
S42
S44
DOES INPUT FILE INCLUDE PLURAL PAGES?
NO
YES
DIVIDE INPUT FILE IN PAGE UNITS
S46
X=1
S48
S50
HAS COLLATION OF X-TH PAGE SUCCEEDED?
NO
YES
S58
NO
IS TEMPORARY STORAGE REGION EMPTY?
YES
S52
NO
IS TEMPORARY STORAGE REGION EMPTY?
YES
S54
TEMPORARY STORAGE REGION OUTPUT PROCESS
OUTPUT X-TH PAGE TO TEMPORARY STORAGE REGION AS ONE FILE
S60
STORE TARGET IMAGE DATA OF X-TH PAGE IN TEMPORARY STORAGE REGION
S56
S62
IS TARGET IMAGE DATA OF X-TH PAGE THE FINAL PAGE?
NO
YES
S64
X=X+1
TEMPORARY STORAGE REGION OUTPUT PROCESS
S66
S68
IS NEXT INPUT FILE PRESENT?
YES
NO
END

FIG. 11

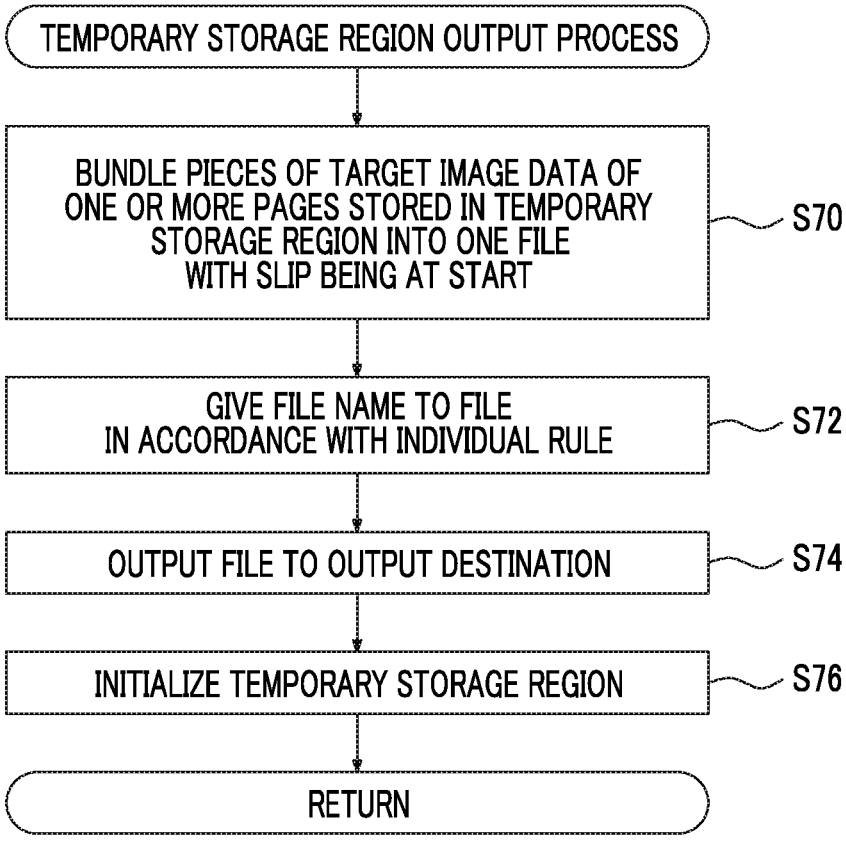

TEMPORARY STORAGE REGION OUTPUT PROCESS
BUNDLE PIECES OF TARGET IMAGE DATA OF ONE OR MORE PAGES STORED IN TEMPORARY STORAGE REGION INTO ONE FILE WITH SLIP BEING AT START
S70
GIVE FILE NAME TO FILE IN ACCORDANCE WITH INDIVIDUAL RULE
S72
OUTPUT FILE TO OUTPUT DESTINATION
S74
INITIALIZE TEMPORARY STORAGE REGION
S76
RETURN

FIG. 12

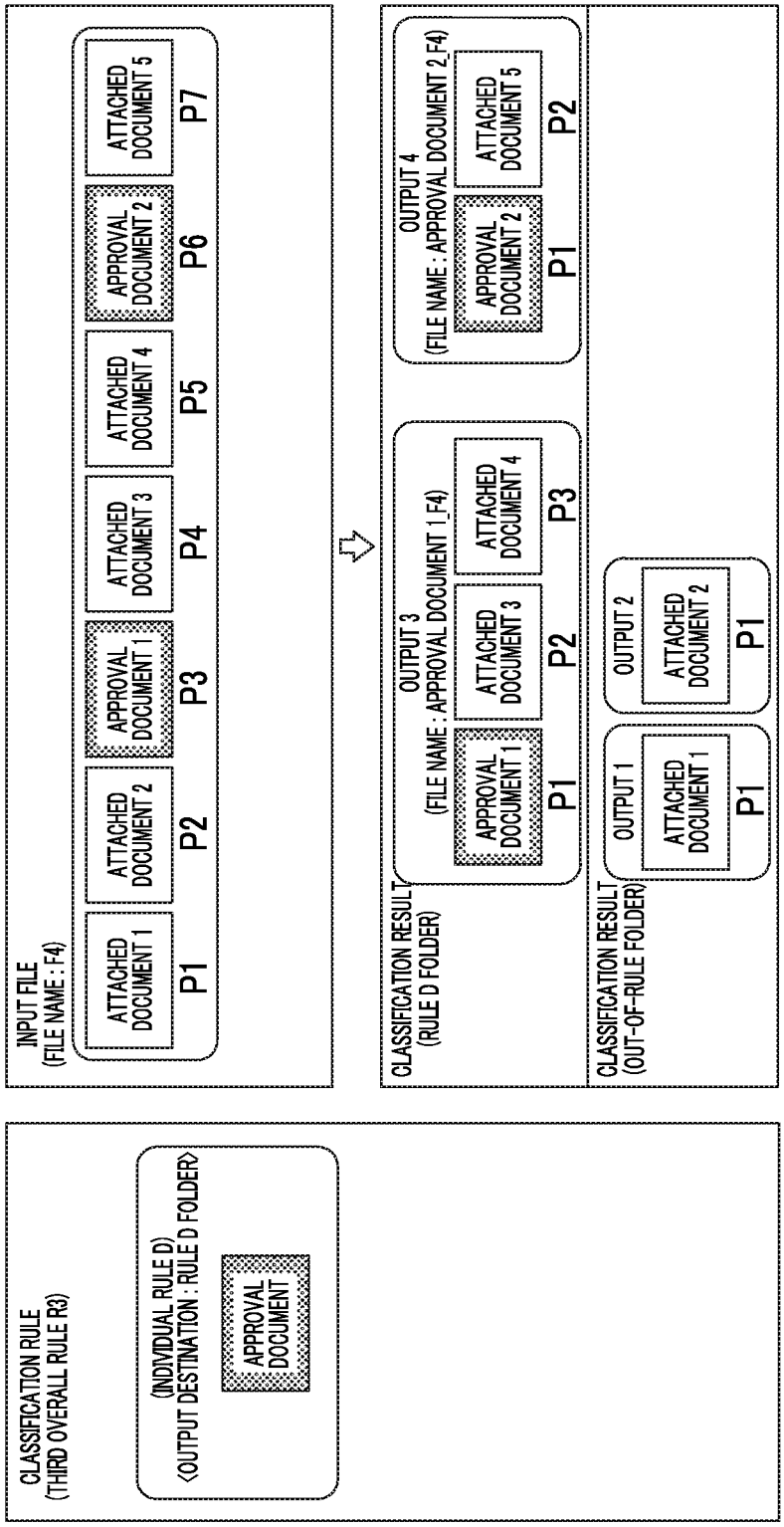
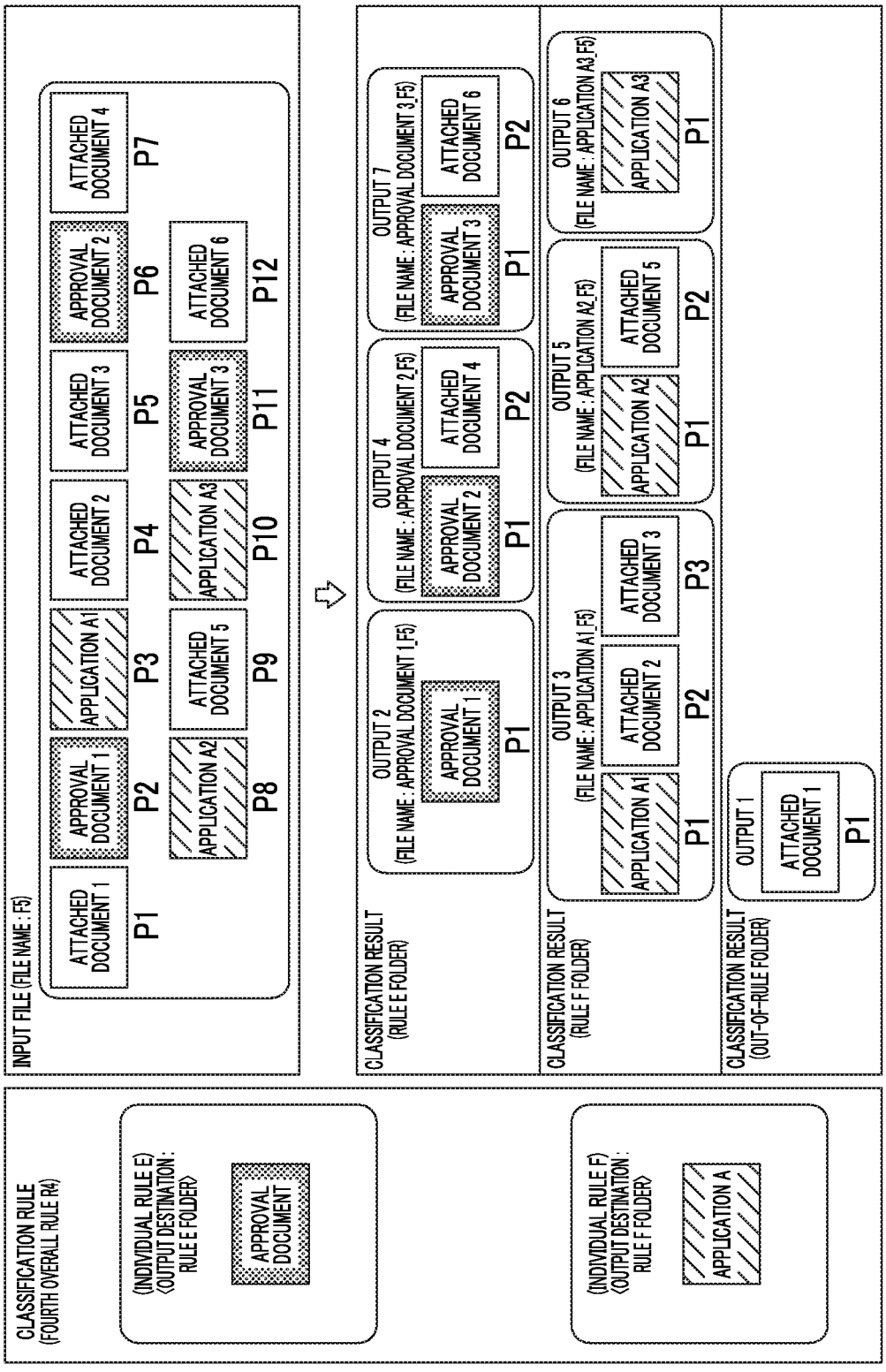

CLASSIFICATION RULE
(THIRD OVERALL RULE R3)
(INDIVIDUAL RULE D)
<OUTPUT DESTINATION : RULE D FOLDER>
APPROVAL DOCUMENT
INPUT FILE
(FILE NAME : F4)
ATTACHED DOCUMENT 1
ATTACHED DOCUMENT 2
APPROVAL DOCUMENT 1
ATTACHED DOCUMENT 3
ATTACHED DOCUMENT 4
APPROVAL DOCUMENT 2
ATTACHED DOCUMENT 5
P1
P2
P3
P4
P5
P6
P7
CLASSIFICATION RESULT
(RULE D FOLDER)
OUTPUT 3
(FILE NAME : APPROVAL DOCUMENT 1_F4)
APPROVAL DOCUMENT 1
ATTACHED DOCUMENT 3
ATTACHED DOCUMENT 4
P1
P2
P3
OUTPUT 4
(FILE NAME : APPROVAL DOCUMENT 2_F4)
APPROVAL DOCUMENT 2
ATTACHED DOCUMENT 5
P1
P2
CLASSIFICATION RESULT
(OUT-OF-RULE FOLDER)
OUTPUT 1
ATTACHED DOCUMENT 1
P1
OUTPUT 2
ATTACHED DOCUMENT 2
P1

FIG. 13


CLASSIFICATION RULE
(FOURTH OVERALL RULE R4)
(INDIVIDUAL RULE E)
<OUTPUT DESTINATION : RULE E FOLDER>
APPROVAL DOCUMENT
(INDIVIDUAL RULE F)
<OUTPUT DESTINATION : RULE F FOLDER>
APPLICATION A
INPUT FILE (FILE NAME : F5)
ATTACHED DOCUMENT 1
APPROVAL DOCUMENT 1
APPLICATION A1
ATTACHED DOCUMENT 2
ATTACHED DOCUMENT 3
APPROVAL DOCUMENT 2
ATTACHED DOCUMENT 4
P1
P2
P3
P4
P5
P6
P7
APPLICATION A2
ATTACHED DOCUMENT 5
APPLICATION A3
APPROVAL DOCUMENT 3
ATTACHED DOCUMENT 6
P8
P9
P10
P11
P12
CLASSIFICATION RESULT
(RULE E FOLDER)
OUTPUT 2
(FILE NAME : APPROVAL DOCUMENT 1_F5)
APPROVAL DOCUMENT 1
P1
OUTPUT 4
(FILE NAME : APPROVAL DOCUMENT 2_F5)
APPROVAL DOCUMENT 2
ATTACHED DOCUMENT 4
P1
P2
OUTPUT 7
(FILE NAME : APPROVAL DOCUMENT 3_F5)
APPROVAL DOCUMENT 3
ATTACHED DOCUMENT 6
P1
P2
CLASSIFICATION RESULT
(RULE F FOLDER)
OUTPUT 3
(FILE NAME : APPLICATION A1_F5)
APPLICATION A1
ATTACHED DOCUMENT 2
ATTACHED DOCUMENT 3
P1
P2
P3
OUTPUT 5
(FILE NAME : APPLICATION A2_F5)
APPLICATION A2
ATTACHED DOCUMENT 5
P1
P2
OUTPUT 6
(FILE NAME : APPLICATION A3_F5)
APPLICATION A3
P1
CLASSIFICATION RESULT
(OUT-OF-RULE FOLDER)
OUTPUT 1
ATTACHED DOCUMENT 1
P1

FILE RECONSTRUCTION DEVICE AND NON-TRANSITORY COMPUTER READABLE STORAGE MEDIUM

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application is based on and claims priority under 35 USC 119 from Japanese Patent Application No. 2016-041128 filed Mar. 3, 2016.

BACKGROUND

Technical Field

[0002] The present invention relates to a file reconstruction device and a non-transitory computer readable storage medium.

SUMMARY

[0003] According to an aspect of the invention, a file reconstruction device includes an extraction unit and a creation unit. The extraction unit extracts pages conforming to a predetermined condition, from an input file including plural pages. The creation unit creates an output file including the two or more conforming pages extracted from the input file by the extraction unit.

BRIEF DESCRIPTION OF THE DRAWINGS

[0004] Exemplary embodiments of the present invention will be described in detail based on the following figures, wherein:

[0005] FIG. **1** is a diagram showing an example of a configuration of an image data classifying system of this exemplary embodiment;

[0006] FIG. **2** is a block diagram showing a configuration of a control unit provided in an image forming apparatus;

[0007] FIG. **3** is a diagram showing an outline of a rule table;

[0008] FIG. **4** is a block diagram showing a configuration of an image storage unit provided in a server apparatus;

[0009] FIGS. **5**A to **5**E are diagrams showing examples of input files;

[0010] FIG. **6** is a flow chart showing a procedure of an extraction and combination classifying process;

[0011] FIG. **7** is a diagram showing a first specific example regarding an extraction and combination classifying process;

[0012] FIG. **8** is a diagram showing a second specific example regarding an extraction and combination classifying process;

[0013] FIG. **9** is a diagram showing a third specific example regarding an extraction and combination classifying process;

[0014] FIG. **10** is a flow chart showing a procedure of a continuous combination classifying process;

[0015] FIG. **11** is a flow chart showing a procedure of a temporary storage region output process (subroutine) shown in FIG. **10**;

[0016] FIG. **12** is a diagram showing a first specific example regarding a continuous combination classifying process; and

[0017] FIG. **13** is a diagram showing a second specific example regarding a continuous combination classifying process.

DETAILED DESCRIPTION

[0018] Hereinafter, an exemplary embodiment of the invention will be described in detail with reference to the accompanying drawings.

[0019] Configuration of Image Data Classifying System

[0020] FIG. **1** is a diagram showing an example of a configuration of an image data classifying system of this exemplary embodiment.

[0021] The image data classifying system includes an image forming apparatus **1** having a scanning function, a printing function, a copying function, and a facsimile function to operate as a so-called multifunction machine, a network **2** and a telephone line **6** that are connected to the image forming apparatus **1**, a terminal apparatus **3** and a server apparatus **5** that are connected to the network **2**, and a facsimile apparatus **4** which is connected to the telephone line **6**.

[0022] Here, the network **2** includes an Internet line or the like. In addition, the terminal apparatus **3** transmits and receives various pieces of data (image data is included) to and from the image forming apparatus **1** through the network **2**, and includes, for example, a personal computer (PC). Further, the facsimile apparatus **4** transmits and receives a facsimile to and from the image forming apparatus **1** through the telephone line **6**. Further, the server apparatus **5** transmits and receives various pieces of data (image data and programs are included) to and from the image forming apparatus **1** through the network **2**.

[0023] In addition, the image forming apparatus **1** includes an image reading unit **10** that reads an image which is recorded in a recording medium such as paper, an image forming unit **20** that forms an image on a recording medium such as paper, a user interface (UI) **30** that receives a user's instruction related to an operation using the turn-on or turn-off of a power supply, a scanning function, a printing function, a copying function, and a facsimile function and displays a message to the user, a transmission and reception unit **40** that transmits and receives data to and from the terminal apparatus **3** and the server apparatus **5** through the network **2** and transmits and receives data to and from the facsimile apparatus **4** through the telephone line **6**, and a control unit **50** that controls operations of the image reading unit **10**, the image forming unit **20**, the UI **30**, and the transmission and reception unit **40**.

[0024] Operation of Image Data Classifying System

[0025] Here, an outline of a classifying process performed by the image data classifying system shown in FIG. **1** will be briefly described.

[0026] First, the control unit **50** provided in the image forming apparatus **1** acquires one input file from the outside of the control unit **50**. Here, the input file is configured to include one or more pages. In addition, examples of the input file include an input file which is transmitted from the terminal apparatus **3** other than its own apparatus through the network **2** and the transmission and reception unit **40**, an input file which is transmitted from the facsimile apparatus **4** other than its own apparatus through the telephone line **6** and the transmission and reception unit **40**, an input file which is obtained by reading an original document by the image reading unit **10** within its own apparatus, and the like.

[0027] Next, the control unit **50** analyzes one input file, which is acquired from the outside, in page units. Subsequently, the control unit **50** classifies pages based on analysis results of the pages constituting the input file to perform

reconstruction to one or more output files. In addition, the control unit **50** outputs one or more output files obtained by reconstructing one input file toward the server apparatus **5** other than its own apparatus.

[0028] The output files that are output from the control unit **50** are transmitted to the server apparatus **5** through the transmission and reception unit **40** and the network **2**. In addition, the server apparatus **5** stores the received output files.

[0029] Configuration of Control Unit Provided in Image Forming Apparatus

[0030] FIG. **2** is a block diagram showing a configuration of the control unit **50** provided in the image forming apparatus **1**.

[0031] Meanwhile, FIG. **2** shows only functional blocks related to an image data classifying process which is performed by the image data classifying system shown in FIG. **1**, and functional blocks related to the control of operations of the image reading unit **10** and the like will not be described.

[0032] The control unit **50** includes a central processing unit (CPU) that reads out and executes a program, a read only memory (ROM) that stores a program executed by the CPU, data which is used at the time of executing the program, and the like, a random access memory (RAM) that stores data temporarily generated at the time of executing the program, and the like, and an electrically erasable programmable read-only memory (EEPROM) that stores data used at the time of executing the program, and the like, is capable of rewriting the contents thereof, and is capable of holding the stored contents even when a power supply is not supplied thereto (all of which are not shown in the drawing). Here, the program executed by the CPU, which is provided in the control unit **50**, can also be provided to the CPU in a state of being stored in a storage medium such as a CD-ROM or can also be provided to the CPU through the network **2**, in addition to being stored in a ROM or an EEPROM in advance.

[0033] The control unit **50** includes an input and output unit **51**, a division unit **52**, a collation unit **53**, a reconstruction unit **54**, and a storage unit **55**. In addition, the storage unit **55** includes a rule storage region **55***a* and a temporary storage region **55***b*.

[0034] The input and output unit **51** inputs and outputs various pieces of data (the above-mentioned input file and output file are included) to and from the control unit **50**, the image reading unit **10**, the image forming unit **20**, the UI **30**, and the transmission and reception unit **40**.

[0035] In a case where an input file which is input from the input and output unit **51** includes plural pages, the division unit **52** divides the input file into page units. Meanwhile, in the following description, image data of the pages constituting the input file will be referred to as "target image data".

[0036] The collation unit **53** collates target image data which is input from the division unit **52** with reference image data which is registered in a rule table stored in the rule storage region **55***a* of the storage unit **55**. Various known methods may be applied as a collation method adopted in the collation unit **53**. In addition, the collation unit **53** stores target image data of a specific page in the temporary storage region **55***b* of the storage unit **55** when necessary based on a result of the collation between the target image data and the reference image data. Meanwhile, the rule table and the reference image data will be described later in detail.

[0037] The reconstruction unit **54** reconstructs the above-mentioned input file to one or more output files each of which includes one or more pages, based on the result of the collation between the target image data and the reference image data which is performed by the collation unit **53**.

[0038] In the storage unit **55**, the rule storage region **55***a* stores the above-mentioned rule table, and the temporary storage region **55***b* stores target image data of a specific page. Here, the rule storage region **55***a* may include an EEPROM or the like, and the temporary storage region **55***b* may include a RAM or the like.

[0039] Here, in this exemplary embodiment, the control unit **50** is an example of a file reconstruction device. In addition, the division unit **52**, the collation unit **53**, the reconstruction unit **54**, and the storage unit **55** are examples of an extraction unit and a creation unit. Further, the collation unit **53** is an example of a collation unit.

[0040] Outline of Rule Table

[0041] FIG. **3** is a diagram showing an outline of a rule table which is used as a classification rule in an image data classifying process. The rule table is stored in the rule storage region **55***a* of the storage unit **55** shown in FIG. **2**.

[0042] In the rule table of this exemplary embodiment, overall rule names given to respective general rules (referred to as overall rules), classification types which are set with respect to the respective overall rules, individual rule names given to one or more rules (referred to as individual rules) which are set among the overall rules, output destinations which are set in the respective individual rules, file name prefixes, and reference images are associated with each other. Here, in the example shown in FIG. **3**, four overall rules (first overall rule R1 to fourth overall rule R4) are registered in the rule table.

[0043] In the rule table shown in FIG. **3**, the classification type indicates a type of image data classifying process, and extraction and combination (classifying process) or continuous combination (classifying process) is set thereto. Here, an "extraction and combination classifying process" refers to a process of extracting a page (collation success page) having succeeded in collation with a slip (reference image data) from one or more pages (target image data) which constitute an input file and combining the extracted one or more collation success pages with each other to thereby configure a bundle of output files. In addition, a "continuous combination classifying process" refers to a process of extracting a page (collation success page) having succeeded in collation with a slip (reference image data) and a page (collation failure page) which is continuous with the collation success page and has failed in collation with a slip (reference image data) and combining the extracted one or more collation success pages and one or more collation failure pages, which are continuous with the collation success pages, with each other to thereby configure a bundle of output files. Meanwhile, the "extraction and combination classifying process" and the "continuous combination classifying process" will be described later in detail.

[0044] In addition, the output destination in the individual rule is set to be a folder name for storing an output file which conforms to the individual rule. Meanwhile, in this example, all of the output destinations are set to be folders provided in an image storage unit **500** (see FIG. **4** to be described later) of the server apparatus **5**.

[0045] Further, the file name prefix in the individual rule is set to be a name which is given to the head of a file name

of an output file which conforms to the individual rule. Meanwhile, in this example, all of the file name prefixes are determined from names of pieces of reference image data to be described later.

[0046] Further, the reference image in the individual rule includes one or more pieces of reference image data. Here, an "approval document", an "application A", an "application B", an "application C", and an "application D" in the reference images described in FIG. **3** will be described before the four overall rules are individually described.

[0047] First, the "approval document" is a document for so-called approval, and is formed in a specific form. In addition, the "application A" is, for example, a document for making a request with respect to a contract A, and is formed in a specific form different from the "approval document". Further, an "application B" is, for example, a document for making a request with respect to a contract B, and is formed in a specific form different from the "approval document" and the "application A". Further, an "application C" is, for example, a document for making a request with respect to a contract C, and is formed in a specific form different from the "approval document", the "application A", and the "application B". In addition, an "application D" is, for example, a document for making a request with respect to a contract D, and is formed in a specific form different from the "approval document", the "application A", the "application B", and the "application C". Hereinafter, a document (an electronic document is included) is formed in a specific form like the "approval document", the "application A", the "application B", the "application C", and the "application D", and a document (an electronic document is included) which is registered as a reference image in the rule table will be referred to as a "slip".

[0048] Meanwhile, contents of the overall rule are set and registered by a user. That is, setting, related to the overall rule (individual rule is included), which is received from the UI **30** provided in the image forming apparatus **1**, the terminal apparatus **3** connected to the image forming apparatus **1** through the network **2**, or the like is registered in the rule storage region **55***a* of the storage unit **55** in the control unit **50**. In addition, in this example, any one of the plural overall rules stored in the rule storage region **55***a* is selected and is set in the control unit **50**.

[0049] Then, contents of each of the first to the fourth overall rules R1 to R4 will be described in detail with reference to FIG. **3**.

[0050] In the first overall rule R1, a classification type is set to "extraction combination", and an individual rule is set to one (individual rule name: an individual rule A). Here, in the individual rule A, an output destination is set to a "rule A folder", and a file name prefix is set to an "application ABCD_". In addition, in the individual rule A, reference images are set to an "approval document", an "application A", an "application B", an "application C", and an "application D".

[0051] In the second overall rule R2, a classification type is set to "extraction combination", and an individual rule is set to two (individual rule name: an individual rule B and an individual rule C). Here, in the individual rule B, an output destination is set to a "rule B folder", and a file name prefix is set to an "application AB_". In addition, in the individual rule B, reference images are set to an "approval document", an "application A", and an "application B". On the other hand, in the individual rule C, an output destination is set to a "rule C folder", and a file name prefix is set to an "application CD_". In addition, in the individual rule C, reference images are set to an "application C" and an "application D". In addition, in the individual rule C and the individual rule D that are included in the second overall rule R2, contents of the individual rules (the output destination, the file name prefix, and the reference image) do not overlap each other.

[0052] In the third overall rule R3, a classification type is set to "continuous combination", and an individual rule is set to one (individual rule name: an individual rule D). Here, in the individual rule D, an output destination is set to a "rule D folder", and a file name prefix is set to an "approval document n_" (here, n is an ordinal number). In addition, in the individual rule D, a reference image is set to an "approval document".

[0053] In the fourth overall rule R4, a classification type is set to "continuous combination", and an individual rule is set to two (individual rule name: an individual rule E and an individual rule F). Here, in the individual rule E, an output destination is set to a "rule E folder", and a file name prefix is set to an "approval document n_" (here, n is an ordinal number). In addition, in the individual rule E, a reference image is set to an "approval document". On the other hand, in the individual rule F, an output destination is set to a "rule F folder", and a file name prefix is set to an "application An_" (here, n is an ordinal number). In addition, in the individual rule F, a reference image is set to an "application A". In addition, in the individual rule E and the individual rule F that are included in the fourth overall rule R4, contents of the individual rules (the output destination, the file name prefix, and the reference image) do not overlap each other.

[0054] In this manner, in the example shown in FIG. **3**, the classification types of the first overall rule R1 and the second overall rule R2 are set to "extraction combination", while the classification types of the third overall rule R3 and the fourth overall rule R4 are set to "continuous combination". In addition, in the first overall rule R1 and the second overall rule R2 of which the classification types are set to "extraction combination", the number of individual rules that are set in the first overall rule R1 is one (single), while the number of individual rules that are set in the second overall rule R2 is two (plural). On the other hand, also in the third overall rule R3 and the fourth overall rule R4 of which the classification types are set to "continuous combination", the number of individual rules that are set in the third overall rule R3 is one (single), while the number of individual rules that are set in the fourth overall rule R4 is two (plural).

[0055] Here, in this exemplary embodiment, two of plural reference images that are set in individual rules constituting the first overall rule R1 and the second overall rule R2 function as a first reference image and a second reference image. In addition, in this exemplary embodiment, reference images that are respectively set in plural individual rules constituting the second overall rule R2 and the fourth overall rule R4 function as one reference image (first condition) and the other reference image (second condition).

[0056] Configuration of Image Storage Unit Provided in Server Apparatus

[0057] FIG. **4** is a diagram showing a configuration of the image storage unit **500** provided in the server apparatus **5** shown in FIG. **1**.

[0058] The image storage unit **500** includes an auxiliary storage device such as a hard disk drive (HDD) or a solid

state drive (SSD). In this example, a rule A folder **501**, a rule B folder **502**, a rule C folder **503**, a rule D folder **504**, a rule E folder **505**, a rule F folder **506**, and an out-of-rule folder **507** are provided in a storage region of the image storage unit **500**.

[0059] The rule A folder **501** corresponds to the output destination of the individual rule A shown in FIG. **3**, and stores an output file including image data that satisfies the individual rule A. The rule B folder **502** corresponds to the output destination of the individual rule B shown in FIG. **3**, and stores an output file including image data that satisfies the individual rule B. The rule C folder **503** corresponds to the output destination of the individual rule C shown in FIG. **3**, and stores an output file including image data that satisfies the individual rule C. The rule D folder **504** corresponds to the output destination of the individual rule D shown in FIG. **3**, and stores an output file including image data that satisfies the individual rule D. The rule E folder **505** corresponds to the output destination of the individual rule E shown in FIG. **3**, and stores an output file including image data that satisfies the individual rule E. The rule F folder **506** corresponds to the output destination of the individual rule F shown in FIG. **3**, and stores an output file including image data that satisfies the individual rule F. The out-of-rule folder **507** stores an output file including image data that does not satisfy an individual rule which is set in each overall rule. Specifically, the out-of-rule folder **507** stores an output file including image data that does not satisfy the individual rule A, for example, in a case where the first overall rule R1 is set, and stores an output file including image data that does not satisfy the individual rule B and the individual rule C, for example, in a case where the second overall rule R2 is set.

[0060] Input File

[0061] FIGS. **5**A to **5**E are diagrams showing examples of input files used in this exemplary embodiment. Here, FIG. **5**A illustrates a first input file F1, FIG. **5**B illustrates a second input file F2, FIG. **5**C illustrates a third input file F3, FIG. **5**D illustrates a fourth input file F4, and FIG. **5**E illustrates a fifth input file F5. Meanwhile, the first input file F1 to the fifth input file F5 are used in a specific example to be described later.

[0062] Here, an "approval document m", an "application Am", an "application Bm", an "application Cm", an "application Dm", and an "attached document m" (here, m is an ordinal number) that are shown in FIGS. **5**A to **5**E will be described before FIGS. **5**A to **5**E are individually described.

[0063] First, the "approval document m" means a document in which, for example, handwritten characters and the like are written in a form of the "approval document" shown in FIG. **3**. In addition, the "application Am" means an application in which, for example, handwritten characters and the like are written in a form of the "application A" shown in FIG. **3**. Further, the "application Bm" means an application in which, for example, handwritten characters and the like are written in a form of the "application B" shown in FIG. **3**. Further, the "application Cm" means an application in which, for example, handwritten characters and the like are written in a form of the "application C" shown in FIG. **3**. In addition, the "application Dm" means an application in which, for example, handwritten characters and the like are written in a form of the "application D" shown in FIG. **3**. In addition, the "attached document m" indicates something other than the above-mentioned various slips (the "approval document", the "application A", the "application B", the "application C", and the "application D").

[0064] The first input file F1 shown in FIG. **5**A includes pieces of target image data for seven pages. Here, among the pieces of target image data for seven pages, a second page (P2) and a third page (P3) are slips, and the remaining pages (P1, P4 to P7: for five pages) are attached documents (attached documents 1 to 5). In addition, among the slips of the two pages, the second page (P2) is an approval document 1 (first) corresponding to an "approval document" of a reference image, and the third page (P3) is an application A1 (first) corresponding to an "application A" of a reference image. In this manner, the first input file F1 includes an "approval document" for one page and an "application A" for one page, as slips.

[0065] The second input file F2 shown in FIG. **5**B includes pieces of target image data for twelve pages. Here, among the pieces of target image data for twelve pages, a second page (P2), a third page (P3), a sixth page (P6), a seventh page (P7), a tenth page (P10), and an eleventh page (P11) are slips, and the remaining pages (P1, P4, P5, P8, P9, P12: for six pages) are attached documents (attached documents 1 to 6). In addition, among the slips of the six pages, the second page (P2) is an approval document 1 (first) corresponding to an "approval document" of a reference image, and the third page (P3) is an application A1 (first) corresponding to an "application A" of a reference image. In addition, the sixth page (P6) is an approval document 2 (second) corresponding to an "approval document" of a reference image, and the seventh page (P7) is an application B1 (first) corresponding to an "application B" of a reference image. Further, the tenth page (P10) is an application C1 (first) corresponding to an "application C" of a reference image, and the eleventh page (P11) is an approval document 3 (third) corresponding to an "approval document" of a reference image. In this manner, the second input file F2 includes "approval documents" for three pages, an "application A" for one page, an "application B" for one page, and an "application C" for one page.

[0066] The third input file F3 shown in FIG. **5**C includes pieces of target image data for twelve pages. Here, among the pieces of target image data for twelve pages, a second page (P2), a third page (P3), a sixth page (P6), a seventh page (P7), an eighth page (P8), a tenth page (P10), and an eleventh page (P11) are slips, and the remaining pages (P1, P4, P5, P9, P12: for five pages) are attached documents (attached documents 1 to 5). In addition, among the slips of the seven pages, the second page (P2) is an approval document 1 (first) corresponding to an "approval document" of a reference image, and the third page (P3) is an application A1 (first) corresponding to an "application A" of a reference image. In addition, the sixth page (P6) is an approval document 2 (second) corresponding to an "approval document" of a reference image, and the seventh page (P7) is an application B1 (first) corresponding to an "application B" of a reference image. Further, the eighth page (P8) is an application C1 (first) corresponding to an "application C" of a reference image, and the tenth page (P10) is an application D1 (first) corresponding to an "application D" of a reference image. Further, the eleventh page (P11) is an approval document 3 (third) corresponding to an "approval document" of a reference image. In this manner, the third input file F3 includes "approval documents" for three pages, an "application A" for one page, an "application

B" for one page, an "application C" for one page, and an "application D" for one page, as slips.

[0067] The fourth input file F4 shown in FIG. **5**D includes pieces of target image data for seven pages. Here, among the pieces of target image data for seven pages, a third page (P3) and a sixth page (P6) are slips, and the remaining pages (P1, P2, P4, P5, P7: for five pages) are attached documents (attached documents 1 to 5). In addition, among the slips of the two pages, the third page (P3) is an approval document 1 (first) corresponding to an "approval document" of a reference image, and the sixth page (P3) is an approval document 2 (second) corresponding to an "approval document" of a reference image. In this manner, the fourth input file F4 includes "approval documents" for two pages, as slips.

[0068] The fifth input file F5 shown in FIG. **5**E includes pieces of target image data for twelve pages. Here, among the pieces of target image data for twelve pages, a second page (P2), a third page (P3), a sixth page (P6), an eighth page (P8), a tenth page (P10), and an eleventh page (P11) are slips, and the remaining pages (P1, P4, P5, P7, P9, P12: for six pages) are attached documents (attached documents 1 to 6). In addition, among the slips of the six pages, the second page (P2) is an approval document 1 (first) corresponding to an "approval document" of a reference image, and the third page (P3) is an application A1 (first) corresponding to an "application A" of a reference image. In addition, the sixth page (P6) is an approval document 2 (second) corresponding to an "approval document" of a reference image, and the eighth page (P8) is an application A2 (second) corresponding to an "application A" of a reference image. Further, the tenth page (P10) is an application A3 (third) corresponding to an "application A" of a reference image, and the eleventh page (P11) is an approval document 3 (third) corresponding to an "approval document" of a reference image. In this manner, the fifth input file F5 includes "approval documents" for three pages and "applications A" for three pages, as slips.

[0069] Meanwhile, although five examples have been described as input files here, a configuration of the input file is not limited thereto, and the number of pages is not limited to seven or twelve. In addition, although a case where an input file includes plural pages has been described as an example here, the input file may include a single page. Further, although a description has been given here on the assumption that an input file includes slips and attached documents, the input file may include only slips or only attached documents.

[0070] Classifying Process in Image Data Classifying System

[0071] Then, a classifying process in the image data classifying system of this exemplary embodiment will be described in more detail. Meanwhile, here, an "extraction and combination classifying process" will be described first, and then a "continuous combination classifying process" will be described.

[0072] Procedure of Extraction and Combination Classifying Process

[0073] FIG. **6** is a flow chart showing a procedure of an extraction and combination classifying process.

[0074] In this exemplary embodiment, a process shown in FIG. **6** is performed by the control unit **50** (CPU) provided in the image forming apparatus **1**. Meanwhile, here, in the control unit **50** of the image forming apparatus **1**, it is assumed that an overall rule (first overall rule R1 or second overall rule R2 shown in FIG. **3**) which includes the execution of an extraction and combination classifying process is read out from the rule storage region **55***a* of the storage unit **55** in advance and is set.

[0075] In this process, first, the division unit **52** acquires an input file through the input and output unit **51** (step **10**). Then, the division unit **52** initializes the temporary storage region **55***b* which is provided in the storage unit **55** (step **12**).

[0076] Next, the division unit **52** determines whether or not an input file acquired in step **10** includes plural pages (step **14**). In a case where a determination result in step **14** is affirmative (YES), the division unit **52** divides the input file in page units (step **16**), and outputs the divided input file to the collation unit **53**, and the process proceeds to the next step **18**. On the other hand, in a case where a determination result in step **14** is negative (NO), the division unit **52** outputs the input file to the collation unit **53** as it is without performing division, and the process proceeds to the next step **18**.

[0077] Subsequently, the collation unit **53** sets a page number X to 1 (step **18**) and collates target image data of an X-th page in the input file with one or more pieces of reference image data associated with an overall rule. In addition, it is determined whether or not the collation of the X-th page has succeeded (whether or not reference images having the same target image and form of the X-th page are present in the input file) (step **20**).

[0078] In a case where a determination result in step **20** is affirmative (YES) (in a case where the X-th page is a conforming page), the collation unit **53** stores the target image data of the X-th page in the temporary storage region **55***b* of the storage unit **55** in association with an individual rule (step **22**), and the process proceeds to the next step **26**. On the other hand, in a case where a determination result in step **20** is negative (NO) (in a case where the X-th page is a non-conforming page), the collation unit **53** outputs the target image data of the X-th page to the reconstruction unit **54**. The reconstruction unit **54** reconstructs the target image data of the X-th page as one file, and outputs the reconstructed target image data to an output destination associated with an individual rule (step **24**), and the process proceeds to the next step **26**. Meanwhile, in step **24**, the reconstruction unit **54** outputs the obtained file to the outside (here, the transmission and reception unit **40**) through the input and output unit **51**, as an output file. In addition, the output file is transmitted to the server apparatus **5** through the network **2**, and is stored in the out-of-rule folder **507** which is provided in the image storage unit **500** of the server apparatus **5**.

[0079] Subsequently, the collation unit **53** determines whether or not the target image data of the X-th page is the final page in the input file (step **26**). In a case where a determination result in step **26** is negative (NO), the collation unit **53** updates a page number to X=X+1 (step **28**), and returns to step **20** to continue a process related to target image data of the next page.

[0080] On the other hand, in a case where a determination result in step **26** is affirmative (YES), the reconstruction unit **54** bundles pieces of target image data of one or more pages stored in the temporary storage region **55***b* of the storage unit **55** into one file on an individual rule by individual rule basis and stores the bundled file (step **30**). Here, in step **30**, there is the possibility that the same number of files (for example,

one file in a case where the number of individual rules is one, or two files in a case where the number of individual rules is two) as the number of individual rules associated with an overall rule are created. In addition, in step **30**, in a case where pieces of target image data for only one page are stored in the temporary storage region **55***b*, a file including the pieces of target image data for one page is created.

[0081] Then, the reconstruction unit **54** gives a file name, obtained by adding a file name prefix associated with an individual rule to a file name of the original input file of each file, to each file created in step **30** (step **32**).

[0082] In addition, the reconstruction unit **54** outputs each file given the file name in step **32** to the outside (here, the transmission and reception unit **40**) through the input and output unit **51**, as an output file (step **34**). In addition, the output file is transmitted to the server apparatus **5** through the network **2**, and is stored in a folder (in this example, any one of the rule A folder **501** to the rule C folder **503** in a case of an extraction and combination classifying process) other than the out-of-rule folder **507** which is provided in the image storage unit **500** of the server apparatus **5**.

[0083] Thereafter, the division unit **52** determines whether or not the next input file is present (step **36**). In a case where a determination result in step **36** is affirmative (YES), the division unit **52** returns to step **10** to continue a process with respect to the next input file. On the other hand, in a case where a determination result in step **36** is negative (NO), the process is terminated.

Specific Example Regarding Extraction and Combination Classifying Process

[0084] Then, the above-described extraction and combination classifying process will be described with reference to three specific examples.

First Specific Example

[0085] FIG. **7** is a diagram showing a first specific example regarding the extraction and combination classifying process.

[0086] Here, a classification rule used in this example is shown on the left side of the drawing. In addition, an input file used in this example is shown on the upper right side of the drawing. Further, a classification result in this example is shown on the lower right side of the drawing. Meanwhile, the relationship therebetween is the same as those in FIGS. **8**, **9**, **12**, and **13** to be described later.

[0087] In the first specific example, the classification rule is a first overall rule R1. Accordingly, an individual rule to be set is only an individual rule A, an output destination is set to a "rule A folder", and reference images are set to an "approval document", an "application A", an "application B", an "application C", and an "application D".

[0088] In addition, in the first specific example, an input file is the first input file F1. The first input file F1 includes pieces of target image data of a total of seven pages including slips (approval document 1 and application A1) of two pages (also see FIG. **5**A).

[0089] Then, a description will be given of a classification result in a case where a process is performed on the first input file F1 in a state where the first overall rule R1 is set, according to the flow chart shown in FIG. **6**.

[0090] In this case, an attached document 1 of a first page (P1) and attached documents 2 to 5 of fourth to seventh pages (P4) to (P7), which are not slips, are determined to be negative (NO) in step **20**, and thus the attached documents are sequentially output as individual output files in step **24**. However, the five output files (an output 1 to an output 5) do not include a slip, and thus the output destinations thereof are not set to the rule A folder **501** which is set in the individual rule A, but are set to the out-of-rule folder **507**. In addition, the five output files (the output 1 to the output 5) are stored in the out-of-rule folder **507** which is provided in the image storage unit **500** of the server apparatus **5**.

[0091] On the other hand, an approval document 1 of a second page (P2) and an application A1 of a third page (P3), which are slips, are determined to be affirmative (YES) in step **20**, and thus the approval document and the application are stored in the temporary storage region **55***b* in a state of being associated with the individual rule A in step **22**. In addition, when a determination result in step **26** is affirmative (YES) in accordance with the execution of collation of the seventh page (P7) which is the final page, the two pages associated with the individual rule A are bundled into one file in step **30**, and then a file name "application ABCD_F1" having a file name prefix "application ABCD_", associated with the individual rule A, added thereto is given to the original input file name (here, referred to as "F1") in step **32**. Then, an output file (output 6) given the file name "application ABCD_F1" is output using the rule A folder **501**, which is set in the individual rule A, as an output destination in step **34**. Thereafter, the output file (output 6) is stored in the rule A folder **501** which is provided in the image storage unit **500** of the server apparatus **5**.

[0092] Meanwhile, when one file is created by bundling plural pages in step **30**, the order of pages in a new file (output file) may match to the order of pages in the original input file (page numbers in the input file may be aligned in ascending order). Meanwhile, this is the same as in a second specific example shown in FIG. **8** and a third specific example shown in FIG. **9** to be described later.

Second Specific Example

[0093] FIG. **8** is a diagram showing a second specific example regarding the extraction and combination classifying process.

[0094] In the second specific example, a classification rule is a first overall rule R1 similar to the first specific example described above. Accordingly, an individual rule to be set is only an individual rule A, an output destination is set to a "rule A folder", and reference images are set to an "approval document", an "application A", an "application B", an "application C", and an "application D".

[0095] In addition, in the second specific example, an input file is the second input file F2. The second input file F2 includes pieces of target image data of a total of twelve pages including slips of six pages (an approval document 1, an application A1, an approval document 2, an application B1, an application C1, and an approval document 3) (also see FIG. **5**B).

[0096] In this manner, the first specific example and the second specific example are the same as each other in terms of a classification rule and are different from each other in contents of input files to be processed.

[0097] Then, a description will be given of a classification result in a case where a process is performed on the second input file F2 in a state where the first overall rule R1 is set, according to the flow chart shown in FIG. **6**.

[0098] In this case, an attached document 1 of a first page (P1), an attached document 2 of a fourth page (P4), an attached document 3 of a fifth page (P5), an attached document 4 of an eighth page (P8), an attached document 5 of a ninth page (P9), and an attached document 6 of a twelfth page (P12), which are not slips, are determined to be negative (NO) in step **20**, and thus the attached documents are sequentially output as individual output files in step **24**. However, the six output files (an output 1 to an output 6) do not include a slip, and thus the output destinations thereof are not set to the rule A folder **501** which is set in the individual rule A, but are set to the out-of-rule folder **507**. In addition, the six output files (the output 1 to the output 6) are stored in the out-of-rule folder **507** which is provided in the image storage unit **500** of the server apparatus **5**.

[0099] On the other hand, an approval document 1 of a second page (P2), an application A1 of a third page (P3), an approval document 2 of a sixth page (P6), an application B1 of a seventh page (P7), an application C1 of a tenth page (P10), and an approval document 3 of an eleventh page (P11), which are slips, are determined to be affirmative (YES) in step **20**, and thus the approval documents and the applications are stored in the temporary storage region **55***b* in a state of being associated with the individual rule A in step **22**. In addition, the six pages associated with the individual rule A are bundled into one file in step **30** in accordance with the execution of collation of the twelfth page (P12) which is the final page, and then a file name "application ABCD_F2" having a file name prefix "application ABCD_", associated with the individual rule A, added thereto is given to the original input file name (here, referred to as "F2") in step **32**. Then, an output file (output 7) given the file name "application ABCD_F2" is output using the rule A folder **501**, which is set in the individual rule A, as an output destination in step **34**. Thereafter, the output file (output 7) is stored in the rule A folder **501** which is provided in the image storage unit **500** of the server apparatus **5**.

Third Specific Example

[0100] FIG. **9** is a diagram showing a third specific example regarding the extraction and combination classifying process.

[0101] In the third specific example, a classification rule is a second overall rule R2 which is different from the first and second specific examples described above. Accordingly, individual rules to be set are two of an individual rule B and an individual rule C. Here, an output destination in the individual rule B is set to a "rule B folder", and reference images are set to an "approval document", an "application A", and an "application B". On the other hand, an output destination in the individual rule C is set to "rule C folder", and reference images are set to an "application C" and an "application D".

[0102] In addition, in the third specific example, an input file is the third input file F3. The third input file F3 includes pieces of target image data of a total of twelve pages including slips of seven pages (also see FIG. **5**C).

[0103] In this manner, the first and second specific examples are different from the third specific example in a classification rule and contents of an input file to be processed.

[0104] Then, a description will be given of a classification result in a case where a process is performed on the third input file F3 in a state where the second overall rule R2 is set, according to the flow chart shown in FIG. **6**.

[0105] In this case, an attached document 1 of a first page (P1), an attached document 2 of a fourth page (P4), an attached document 3 of a fifth page (P5), an attached document 4 of a ninth page (P9), and an attached document 5 of a twelfth page (P12), which are not slips, are determined to be negative (NO) in step **20**, and thus the attached documents are sequentially output as individual output files in step **24**. However, the five output files (an output 1 to an output 5) do not include a slip, and thus the output destinations thereof are not set to the rule B folder **502** which is set in the individual rule B or the rule C folder **503** which is set in an individual rule C, but are set to the out-of-rule folder **507**. In addition, the five output files (the output 1 to the output 5) are stored in the out-of-rule folder **507** which is provided in the image storage unit **500** of the server apparatus **5**.

[0106] On the other hand, an approval document 1 of a second page (P2), an application A1 of a third page (P3), an approval document 2 of a sixth page (P6), an application B1 of a seventh page (P7), an application C1 of an eighth page (P8), an application D1 of a tenth page (P10), and an approval document 3 of an eleventh page (P11), which are slips, are determined to be affirmative (YES) in step **20**, and thus the approval documents and the applications are stored in the temporary storage region **55***b* in step **22**. However, in this example, the approval document 1, the application A1, the approval document 2, the application B1, and the approval document 3 that conform to the individual rule B are stored in the temporary storage region **55***b* in a state of being associated with the individual rule B. On the other hand, in this example, the application C1 and the application D1 that conform to the individual rule C are stored in the temporary storage region **55***b* in a state of being associated with the individual rule C.

[0107] In addition, when a determination result in step **26** is affirmative (YES) in accordance with the execution of collation of the twelfth page (P12) which is the final page, the five pages associated with the individual rule B are bundled into one file in step **30**, and then a file name "application AB_F3" having a file name prefix "application AB_", associated with the individual rule B, added thereto is given to the original input file name (here, referred to as "F3") in step **32**. In addition, an output file (output 6) given the file name "application AB_F3" is output using the rule B folder **502**, which is set in the individual rule B, as an output destination in step **34**. Thereafter, the output file (output 6) is stored in the rule B folder **502** which is provided in the image storage unit **500** of the server apparatus **5**.

[0108] In addition, the two pages associated with the individual rule C are bundled into one file in step **30**, and then a file name "application CD_F3" having a file name prefix "application CD_", associated with the individual rule C, added thereto is given to the original input file name (here, referred to as "F3") in step **32**. In addition, an output file (output 7) given the file name "application CD_F3" is output using the rule C folder **503**, which is set in the individual rule C, as an output destination in step **34**. Thereafter, the output file (output 7) is stored in the rule C folder **503** which is provided in the image storage unit **500** of the server apparatus **5**.

[0109] Procedure of Continuous Combination Classifying Process

[0110] FIG. **10** is a flow chart showing a procedure of a continuous combination classifying process.

[0111] In this exemplary embodiment, a process shown in FIG. **10** (and FIG. **11** to be described later) is performed by the control unit **50** (CPU) which is provided in the image forming apparatus **1**. Meanwhile, here, in the control unit **50** of the image forming apparatus **1**, it is assumed that an overall rule (the third overall rule R3 or the fourth overall rule R4 shown in FIG. **3**) which includes the execution of a continuous combination classifying process is read out from the rule storage region **55***a* of the storage unit **55** in advance and is set.

[0112] In this process, first, the division unit **52** acquires an input file through the input and output unit **51** (step **40**). Then, the division unit **52** initializes the temporary storage region **55***b* which is provided in the storage unit **55** (step **42**).

[0113] Next, the division unit **52** determines whether or not an input file acquired in step **40** includes plural pages (step **44**). In a case where a determination result in step **44** is affirmative (YES), the division unit **52** divides the input file in page units (step **46**), and outputs the divided input file to the collation unit **53**, and the process proceeds to the next step **48**. On the other hand, in a case where a determination result in step **44** is negative (NO), the division unit **52** outputs the input file to the collation unit **53** as it is without performing division, and the process proceeds to the next step **48**.

[0114] Subsequently, the collation unit **53** sets a page number X to 1 (step **48**) and collates target image data of an X-th page in the input file with one or more pieces of reference image data associated with an overall rule. In addition, it is determined whether or not the collation of the X-th page has succeeded (whether or not reference images having the same target image and form of the X-th page are present in the input file) (step **50**).

[0115] In a case where a determination result in step **50** is affirmative (YES) (in a case where the X-th page is a conforming page), the collation unit **53** determines whether or not the temporary storage region **55***b* provided in the storage unit **55** is empty (whether or not there is target image data (page) which is stored already) (step **52**). In a case where a determination result in step **52** is negative (NO), the reconstruction unit **54** performs a temporary storage region output process which is a subroutine (step **54**), and clears the temporary storage region **55***b*, and the process proceeds to the next step **56**. On the other hand, in a case where a determination result in step **52** is affirmative (YES), the process proceeds to the next step **56** as it is. Meanwhile, the temporary storage region output process shown in step **54** will be described later in detail.

[0116] Next, the collation unit **53** stores the target image data of the X-th page in the temporary storage region **55***b* (step **56**), and the process proceeds to the next step **62**.

[0117] On the other hand, in a case where a determination result in step **50** mentioned above is negative (NO) (in a case where the X-th page is a non-conforming page), the collation unit **53** determines whether or not the temporary storage region **55***b* provided in the storage unit **55** is empty (step **58**). In a case where a determination result in step **58** is negative (NO), the process proceeds to step **56** mentioned above, and the collation unit **53** stores the target image data of the X-th page in the temporary storage region **55***b* and the process proceeds to the next step **62**. On the other hand, in a case where a determination result in step **58** is affirmative (YES), the collation unit **53** outputs the target image data of the X-th page to the reconstruction unit **54**. The reconstruction unit **54** reconstructs the target image data of the X-th page into one file, and outputs the reconstructed data to an output destination associated with an individual rule (step **60**), and the process proceeds to the next step **62**. Meanwhile, in step **60**, the reconstruction unit **54** outputs the obtained file to the outside (here, the transmission and reception unit **40**) through the input and output unit **51**, as an output file. In addition, the output file is transmitted to the server apparatus **5** through the network **2**, and is stored in the out-of-rule folder **507** which is provided in the image storage unit **500** of the server apparatus **5**.

[0118] Subsequently, the collation unit **53** determines whether or not the target image data of the X-th page is the final page in the input file (step **62**). In a case where a determination result in step **62** is negative (NO), the collation unit **53** updates a page number to X=X+1 (step **64**), and returns to step **50** to continue a process related to target image data of the next page.

[0119] On the other hand, in a case where a determination result in step **62** is affirmative (YES), the reconstruction unit **54** performs a temporary storage region output process which is a subroutine (step **66**), and clears the temporary storage region **55***b*, and the process proceeds to the next step **68**. Meanwhile, the temporary storage region output process shown in step **66** has the same contents of that performed in step **54** mentioned above.

[0120] Thereafter, the division unit **52** determines whether or not the next input file is present (step **68**). In a case where a determination result in step **68** is affirmative (YES), the division unit **52** returns to step **40** and continues a process with respect to the next input file. On the other hand, in a case where a determination result in step **68** is negative (NO), the process is terminated.

[0121] FIG. **11** is a flow chart showing a procedure of a temporary storage region output process (subroutine) shown in FIG. **10**. The temporary storage region output process is performed in each of step **54** and step **66** that are shown in FIG. **10**.

[0122] In this process, first, the reconstruction unit **54** the reconstruction unit **54** bundles pieces of target image data of one or more pages stored in the temporary storage region **55***b* of the storage unit **55** into one file with a slip being at a start and stores the bundled file (step **70**). That is, in the step **70**, one file is necessarily created. In addition, in step **70**, in a case where pieces of target image data for only one page are stored in the temporary storage region **55***b*, a file including the pieces of target image data for one page is created.

[0123] Then, the reconstruction unit **54** gives a file name, obtained by adding a file name prefix associated with an individual rule to a file name of the original input file of the file, to one file created in step **70** (step **72**).

[0124] In addition, the reconstruction unit **54** outputs one file given the file name in step **72** to the outside (here, the transmission and reception unit **40**) through the input and output unit **51**, as an output file (step **74**). In addition, the output file is transmitted to the server apparatus **5** through the network **2**, and is stored in a folder (in this example, any one of the rule D folder **504** to the rule F folder **506** in a case of a continuous combination classifying process) other than

the out-of-rule folder **507** which is provided in the image storage unit **500** of the server apparatus **5**.

[0125] Thereafter, the reconstruction unit **54** initializes the temporary storage region **55***b* which is provided in the storage unit **55** (step **76**), and returns to a main routine of the continuous combination classifying process shown in FIG. **10**.

Specific Example of Continuous Combination Classifying Process

[0126] Next, the above-described continuous combination classifying process will be described with reference to two specific examples.

First Specific Example

[0127] FIG. **12** is a diagram showing a first specific example regarding the continuous combination classifying process.

[0128] In the first specific example, a classification rule is a third overall rule R3. Accordingly, an individual rule to be set is only an individual rule D, an output destination is set to a "rule D folder", and a reference image is set to an "approval document".

[0129] In addition, in the first specific example, an input file is the fourth input file F4. The fourth input file F4 includes pieces of target image data of a total of seven pages including slips of two pages (an approval document 1 and an approval document 2) (also see FIG. **5**D).

[0130] Then, a description will be given of a classification result in a case where a process is performed on the fourth input file F4 in a state where the third overall rule R3 is set, according to the flow charts shown in FIGS. **10** and **11**.

[0131] In this case, first, an attached document 1 of a first page (P1) and an attached document 2 of a second page (P2), which are not slips, are determined to be negative (NO) in step **50** and are then determined to be affirmative (YES) in step **58**, and thus the attached documents are sequentially output as individual output files in step **60**. However, the two output files (an output 1 and an output 2) do not include a slip, and thus the output destinations thereof are not set to the rule D folder **504** which is set in the individual rule D, but are set to the out-of-rule folder **507**. In addition, the two output files (the output 1 and the output 2) are stored in the out-of-rule folder **507** which is provided in the image storage unit **500** of the server apparatus **5**.

[0132] In addition, an approval document 1 of a third page (P3), which is a slip, is determined to be affirmative (YES) in step **50** and is then determined to be affirmative (YES) in step **52**, and thus the approval document is stored in the temporary storage region **55***b* in step **56**. Next, an attached document 3 of a fourth page (P4) and an attached document 4 of a fifth page (P5), which are not slips, are determined to be negative (NO) in step **50** and are then determined to be negative (NO) in step **58**, and thus the attached documents are stored in the temporary storage region **55***b* together with the approval document 1 of the third page (P3) mentioned above, in step **56**.

[0133] Further, an approval document 2 of a sixth page (P6), which is a slip, is determined to be affirmative (YES) in step **50** and is then determined to be negative (NO) in step **52**. Accordingly, the temporary storage region output process (subroutine) shown in step **54** is performed, and three pages (the approval document 1, the attached document 3, and the attached document 4) which are stored in the temporary storage region **55***b* are bundled into one file with the approval document 1 as the first page in step **70**. Then, a file name "approval document 1_F4" having a file name prefix "approval document 1_", associated with the individual rule D, added thereto is given to the original input file name (here, referred to as "F4") in step **72**. In addition, an output file (output 3) given the file name "approval document 1_F4" is output using the rule D folder **504**, which is set in the individual rule D, as an output destination in step **74**. Thereafter, the output file (output 3) is stored in the rule D folder **504** which is provided in the image storage unit **500** of the server apparatus **5**. In addition, after the output file (output 3) is output, the temporary storage region **55***b* is initialized in step **76**, and the process of step **54** is completed.

[0134] Then, the approval document 2 of the sixth page (P6), which is a slip, is stored in the temporary storage region **55***b* in step **56**. Next, an attached document 5 of a seventh page (P7), which is not a slip, is determined to be negative (NO) in step **50** and is then determined to be negative (NO) in step **58**, and thus the attached document is stored in the temporary storage region **55***b* together with the approval document 2 of the sixth page (P6) mentioned above, in step **56**.

[0135] In addition, a determination result in step **62** is affirmative (YES) in accordance with the execution of collation of the seventh page (P7) which is the final page. Accordingly, the temporary storage region output process (subroutine) shown in step **66** is performed, and two pages (the approval document 2 and the attached document 5) which are stored in the temporary storage region **55***b* are bundled into one file with the approval document 2 as the first page in step **70**. Then, a file name "approval document 2_F4" having a file name prefix "approval document 2_", associated with the individual rule D, added thereto is given to the original input filename (here, referred to as "F4") in step **72**. In addition, an output file (output 4) given the file name "approval document 2_F4" is output using the rule D folder **504**, which is set in the individual rule D, as an output destination in step **74**. Thereafter, the output file (output 4) is stored in the rule D folder **504** which is provided in the image storage unit **500** of the server apparatus **5**. In addition, after the output file (output 4) is output, the temporary storage region **55***b* is initialized in step **76**, and the process of step **66** is completed.

[0136] Meanwhile, when one file is created by bundling plural pages in step **70** in the temporary storage region output process shown in step **54** and step **66**, the order of pages in a new file (output file) may match to the order of pages in the original input file (page numbers in the input file may be aligned in ascending order). Meanwhile, this is the same as in a second specific example shown in FIG. **13** to be described later.

Second Specific Example

[0137] FIG. **13** is a diagram showing a second specific example regarding the continuous combination classifying process.

[0138] In the second specific example, a classification rule is a fourth overall rule R4. Accordingly, an individual rule to be set is two of an individual rule E and an individual rule F. Here, an output destination in the individual rule E is set to a "rule E folder", and a reference image is set to an

"approval document". On the other hand, an output destination in the individual rule F is set to a "rule F folder", and a reference image is set to an "application A".

[0139] In addition, in the second specific example, an input file is a fifth input file F5. The fifth input file F5 includes pieces of target image data of a total of twelve pages including slips of six pages (also see FIG. **5**E).

[0140] In this manner, the first specific example and the second specific example are different from each other in a classification rule and contents of an input file to be processed.

[0141] Then, a description will be given of a classification result in a case where a process is performed on the fifth input file F5 in a state where the fourth overall rule R4 is set, according to the flow charts shown in FIGS. **10** and **11**.

[0142] In this case, first, an attached document 1 of a first page (P1), which is not a slip, is determined to be negative (NO) in step **50** and is then determined to be affirmative (YES) in step **58**, and thus the attached document is output as one output file (output 1) in step **60**. However, the output file (output 1) does not include a slip, and thus the output destination thereof is not set to the rule E folder **505** which is set in the individual rule E and the rule F folder **506** which is set in the individual rule F, but is set to the out-of-rule folder **507**. In addition, the output file (output 1) is stored in the out-of-rule folder **507** which is provided in the image storage unit **500** of the server apparatus **5**.

[0143] In addition, an approval document 1 of a second page (P2), which is a slip, is determined to be affirmative (YES) in step **50** and is then determined to be affirmative (YES) in step **52**, and thus the approval document is stored in the temporary storage region **55***b* in step **56**.

[0144] Further, an application A1 of a third page (P3), which is a slip, is determined to be affirmative (YES) in step **50** and is then determined to be negative (NO) in step **52**. Accordingly, the temporary storage region output process (subroutine) shown in step **54** is performed, and one page (approval document 1) which is stored in the temporary storage region **55***b* is bundled into one file in step **70**. Then, a file name "approval document 1_F5" having a file name prefix "approval document 1_", associated with the individual rule E, added thereto is given to the original input file name (here, referred to as "F5") in step **72**. In addition, an output file (output 2) given the file name "approval document 1_F5" is output using the rule E folder **505**, which is set in the individual rule E, as an output destination in step **74**. Thereafter, the output file (output 2) is stored in the rule E folder **505** which is provided in the image storage unit **500** of the server apparatus **5**. In addition, after the output file (output 2) is output, the temporary storage region **55***b* is initialized in step **76**, and the process of step **54** is completed.

[0145] Then, the application A1 of the third page (P3), which is a slip, is stored in the temporary storage region **55***b* in step **56**. Next, an attached document 2 of a fourth page (P4) and an attached document 3 of a fifth page (P5), which are not slips, are determined to be negative (NO) in step **50** and are then determined to be negative (NO) in step **58**, and thus the attached documents are stored in the temporary storage region **55***b* together with the application A1 of the third page (P3) mentioned above, in step **56**.

[0146] Further, an approval document 2 of a sixth page (P6), which is a slip, is determined to be affirmative (YES) in step **50** and is then determined to be negative (NO) in step **52**. Accordingly, the temporary storage region output process (subroutine) shown in step **54** is performed, and three pages (the application A1, the attached document 2, and the attached document 3) which are stored in the temporary storage region **55***b* are bundled into one file with the application A1 as the first page in step **70**. Then, a file name "application A1_F5" having a file name prefix "application A1_", associated with the individual rule F, added thereto is given to the original input file name (here, referred to as "F5") in step **72**. In addition, an output file (output 3) given the file name "application A1_F5" is output using the rule F folder **506**, which is set in the individual rule F, as an output destination in step **74**. Thereafter, the output file (output 3) is stored in the rule F folder **506** which is provided in the image storage unit **500** of the server apparatus **5**. In addition, after the output file (output 3) is output, the temporary storage region **55***b* is initialized in step **76**, and the process of step **54** is completed.

[0147] Then, the approval document 2 of the sixth page (P6), which is a slip, is stored in the temporary storage region **55***b* in step **56**. Next, an attached document 4 of a seventh page (P7), which is not a slip, is determined to be negative (NO) in step **50** and is then determined to be negative (NO) in step **58**, and thus the attached document is stored in the temporary storage region **55***b* together with the approval document 2 of the sixth page (P6) mentioned above, in step **56**.

[0148] Further, an application A2 of an eighth page (P8), which is a slip, is determined to be affirmative (YES) in step **50** and is then determined to be negative (NO) in step **52**. Accordingly, the temporary storage region output process (subroutine) shown in step **54** is performed, and two pages (the approval document 2 and the attached document 4) which are stored in the temporary storage region **55***b* are bundled into one file with the approval document 2 as the first page in step **70**. Then, a file name "approval document 2_F5" having a file name prefix "approval document 2_", associated with the individual rule E, added thereto is given to the original input file name (here, referred to as "F5") in step **72**. In addition, an output file (output 4) given the file name "approval document 2_F5" is output using the rule E folder **505**, which is set in the individual rule E, as an output destination in step **74**. Thereafter, the output file (output 4) is stored in the rule E folder **505** which is provided in the image storage unit **500** of the server apparatus **5**. In addition, after the output file (output 4) is output, the temporary storage region **55***b* is initialized in step **76**, and the process of step **54** is completed.

[0149] Then, the application A2 of the eighth page (P8), which is a slip, is stored in the temporary storage region **55***b* in step **56**. Next, an attached document 5 of a ninth page (P9), which is not a slip, is determined to be negative (NO) in step **50** and is then determined to be negative (NO) in step **58**, and thus the attached document is stored in the temporary storage region **55***b* together with the application A2 of the eighth page (P8) mentioned above, in step **56**.

[0150] In addition, an application A3 of a tenth page (P10), which is a slip, is determined to be affirmative (YES) in step **50** and is then determined to be negative (NO) in step **52**. Accordingly, the temporary storage region output process (subroutine) shown in step **54** is performed, and two pages (the application A2 and the attached document 5) which are stored in the temporary storage region **55***b* are bundled into one file with the application A2 as the first page

in step **70**. Then, a file name "application A2_F5" having a file name prefix "application A2_", associated with the individual rule F, added thereto is given to the original input filename (here, referred to as "F5") in step **72**. In addition, an output file (output 5) given the file name "application A2_F5" is output using the rule F folder **506**, which is set in the individual rule F, as an output destination in step **74**. Thereafter, the output file (output 5) is stored in the rule F folder **506** which is provided in the image storage unit **500** of the server apparatus **5**. In addition, after the output file (output 5) is output, the temporary storage region **55***b* is initialized in step **76**, and the process of step **54** is completed.

[0151] Then, the application A3 of the tenth page (P10), which is a slip, is stored in the temporary storage region **55***b* in step **56**.

[0152] Further, an approval document 3 of an eleventh page (P11), which is a slip, is determined to be affirmative (YES) in step **50** and is then determined to be negative (NO) in step **52**. Accordingly, the temporary storage region output process (subroutine) shown in step **54** is performed, and one page (the application A3) which is stored in the temporary storage region **55***b* is configured as one file in step **70**. Then, a file name "application A3_F5" having a file name prefix "application A3_", associated with the individual rule F, added thereto is given to the original input file name (here, referred to as "F5") in step **72**. In addition, an output file (output 6) given the file name "application A3_F5" is output using the rule F folder **506**, which is set in the individual rule F, as an output destination in step **74**. Thereafter, the output file (output 6) is stored in the rule F folder **506** which is provided in the image storage unit **500** of the server apparatus **5**. In addition, after the output file (output 6) is output, the temporary storage region **55***b* is initialized in step **76**, and the process of step **54** is completed.

[0153] Then, the approval document 3 of the eleventh page (P11), which is a slip, is stored in the temporary storage region **55***b* in step **56**. Next, an attached document 6 of a twelfth page (P12), which is not a slip, is determined to be negative (NO) in step **50** and is then determined to be negative (NO) in step **58**, and thus the attached document is stored in the temporary storage region **55***b* together with the approval document 3 of the eleventh page (P11) mentioned above, in step **56**.

[0154] In addition, a determination result in step **62** is affirmative (YES) in accordance with the execution of collation of the twelfth page (P12) which is the final page. Accordingly, the temporary storage region output process (subroutine) shown in step **66** is performed, and two pages (the approval document 3 and the attached document 6) which are stored in the temporary storage region **55***b* are bundled into one file with the approval document 3 as the first page in step **70**. Then, a file name "approval document 3_F5" having a file name prefix "approval document 3_", associated with the individual rule E, added thereto is given to the original input filename (here, referred to as "F5") in step **72**. In addition, an output file (output 7) given the file name "approval document 3_F5" is output using the rule E folder **505**, which is set in the individual rule E, as an output destination in step **74**. Thereafter, the output file (output 7) is stored in the rule E folder **505** which is provided in the image storage unit **500** of the server apparatus **5**. In addition, after the output file (output 7) is output, the temporary storage region **55***b* is initialized in step **76**, and the process of step **66** is completed.

Modification Example of Continuous Combination Classifying Process

[0155] In the above-described continuous combination classifying process, a page of a slip extracted from an input file and pages of one or more attached documents continuous with the page of the slip in the input file are configured as a bundle of output files, but the invention is not limited thereto. For example, a configuration may be adopted in which the number of one or more pages (referred to as a set number of pages) is set in advance, and a page of a slip extracted from an input file and the above-mentioned set number of pages continuous with the page of the slip are configured as a bundle of output files. In this case, for example, when a set number of pages is set to 2, an output file including a slip necessarily includes a slip for one page and accessory documents (not limited to attached documents) for two pages continuous with the page of the slip.

[0156] Others

[0157] Meanwhile, in this exemplary embodiment, an output file obtained by reconstructing an input file is stored in the image storage unit **500** which is provided in the server apparatus **5**, but the invention is not limited thereto. For example, an output destination of the output file may be the terminal apparatus **3** or any of other apparatuses. In addition, in this exemplary embodiment, although an output file obtained by reconstructing an input file is stored in plural folders which are provided in the image storage unit **500** of the server apparatus **5**, the invention is not limited thereto, and the folders may be provided in different storage apparatuses.

[0158] Further, in this exemplary embodiment, an output file obtained by reconstructing an input file is output as data, but the invention is not limited thereto. For example, one or more pages (image data) which constitute the output file may be printed on a sheet using the image forming unit **20**, may be transmitted to the terminal apparatus **3** or the like in a state of being attached to an e-mail, or may be used to start up a specific program (application) which is associated with the output file.

[0159] The foregoing description of the exemplary embodiments of the present invention has been provided for the purposes of illustration and description. It is not intended to be exhaustive or to limit the invention to the precise forms disclosed. Obviously, many modifications and variations will be apparent to practitioners skilled in the art. The embodiments were chosen and described in order to best explain the principles of the invention and its practical applications, thereby enabling others skilled in the art to understand the invention for various embodiments and with the various modifications as are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the following claims and their equivalents.

What is claimed is:

1. A file reconstruction device comprising:

an extraction unit that extracts pages conforming to a predetermined condition, from an input file including a plurality of pages; and

a creation unit that creates an output file including the two or more conforming pages extracted from the input file by the extraction unit.

2. The file reconstruction device according to claim 1, further comprising:

a collation unit that collates images of the respective pages in the input file with a reference image which is determined as the condition in advance,

wherein the extraction unit extracts, as the conforming page, a page having succeeded in collation with the reference image, which is performed by the collation unit, from the input file.

3. The file reconstruction device according to claim 2,

wherein in a case where the reference image in the condition includes a first reference image and a second reference image, the creation unit creates the output file including

one or more conforming pages having succeeded in collation with the first reference image, which is performed by the collation unit, in the input file, and

one or more conforming pages having succeeded in collation with the second reference image, which is performed by the collation unit, in the input file.

4. The file reconstruction device according to claim 3, wherein in a case where the condition includes a first condition including one of the first and second reference images as the reference image and a second condition including the other of the first and second reference images as the reference image, the creation unit creates, as the output file, a first output file including two or more pages having succeeded in collation with the first reference images, which is performed by the collation unit, in the input file, and a second output file including two or more pages having succeeded in collation with the second reference images, which is performed by the collation unit, in the input file.

5. A file reconstruction device comprising:

an extraction unit that extracts a page conforming a predetermined condition, from an input file including a plurality of pages; and

a creation unit that creates an output file including

the single conforming page which is extracted from the input file by the extraction unit, and

one or more non-conforming pages which are continuous with the conforming page in the input file and which are not extracted from the input file by the extraction unit due to not conforming to the condition.

6. The file reconstruction device according to claim 5, further comprising:

a collation unit that collates images of the respective pages in the input file with a reference image which is determined as the condition in advance,

wherein the extraction unit extracts, as the conforming pages, pages having succeeded in collation with the reference image, which is performed by the collation unit, from the input file.

7. A file reconstruction device comprising:

an extraction unit that extracts a page conforming to a predetermined condition and a predetermined number of continuous pages which are continuous with the conforming page, from an input file including a plurality of pages; and

a creation unit that creates an output file including the single conforming page and the one or more continuous pages which are extracted from the input file by the extraction unit.

8. The file reconstruction device according to claim 7, further comprising:

a collation unit that collates images of the respective pages in the input file with a reference image which is determined as the condition in advance,

wherein the extraction unit extracts, as the conforming pages, pages having succeeded in collation with the reference image, which is performed by the collation unit, from the input file.

9. A non-transitory computer readable storage medium storing a program that causes a computer to execute a file reconstruction process comprising:

extracting pages conforming to a predetermined condition, from an input file including a plurality of pages; and

creating an output file including the two or more conforming pages extracted from the input file.

10. A non-transitory computer readable storage medium storing a program that causes a computer to execute a file reconstruction process comprising:

extracting a page conforming a predetermined condition, from an input file including a plurality of pages; and

creating an output file including

the single conforming page extracted from the input file, and

one or more non-conforming pages which are continuous with the conforming page in the input file and which are not extracted from the input file due to not conforming to the condition.

11. A non-transitory computer readable storage medium storing a program that causes a computer to execute a file reconstruction process comprising:

extracting a page conforming to a predetermined condition and a predetermined number of continuous pages which are continuous with the conforming page, from an input file including a plurality of pages; and

creating an output file including the single conforming page and the one or more continuous pages which are extracted from the input file.

* * * * *