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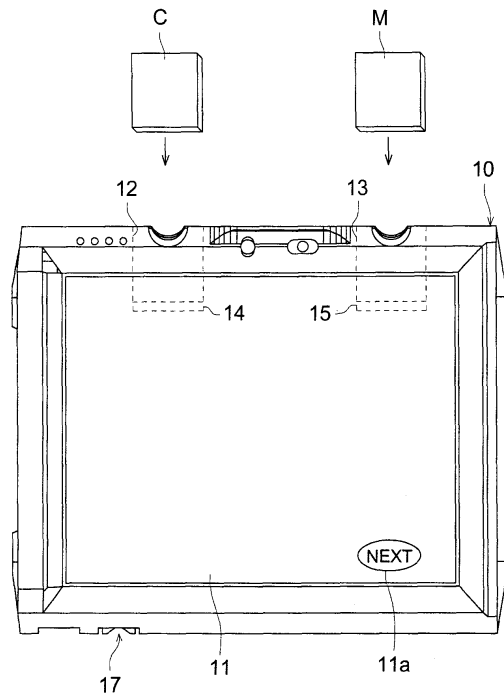
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Order situation tracing system and print order receiving apparatus

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An order situation tracing system for tracing a processing situation for a print order, comprises a detector connected to at least one of print order receiving apparatus which is capable of outputting image data and an image forming apparatus which forms a print based on a print order information outputted from the print order receiving apparatus respectively and to detect the processing situation for the print order from receipt of the print order to completion of forming the print based on the signal from the print order receiving apparatus and from the image forming apparatus; a memory to store backup data regarding the print order in accordance with the processing situation for the print order; and an output device to output information regarding the processing situation detected by the detector.

FIG. 1



Description

BACKGROUND OF THE INVENTION

[0001] The present invention relates to an order situation tracing system and to a print order receiving apparatus, and in particular, to a print order receiving apparatus with which a print order can be placed based on image data and to an order situation tracing system capable of tracing the situation of the print order placed through the print order receiving apparatus.

[0002] There has been developed a digital camera which converts an optical image of a subject into digital image data and can store them in a memory card, and the digital camera is already available on the market. Since a digital camera is usually equipped with a liquid crystal panel for an image display, it is possible to make the liquid crystal panel to display the photographed image based on the stored image data.

[0003] Unlike silver halide photography, an image displayed on a liquid crystal panel of a digital camera is a temporary image which disappears when the power supply for the digital camera, for example, is turned off, and therefore, the display on the liquid crystal panel is inappropriate when appreciating an image for a long time, which is a problem. Further, when a subject including plural persons is photographed by a digital camera, and an image thereof needs to be given to each person, the person having no image display means can not appreciate the image if no actions are taken when the person is given a storage medium in which copied image data are stored, although image data themselves can be copied on a separate storage medium, which is also a problem.

[0004] Notwithstanding the foregoing, it is possible to read image data stored in a storage medium into a personal computer to display on a display as an image, or to print an image through a printer connected to the personal computer. However, not all the people trying to appreciate images obtained through photographing by a digital camera can use a personal computer, because a personal computer and a peripheral equipment such as a printer are usually expensive. Therefore, there is a demand for a system which makes it possible to appreciate images obtained through photographing by a digital camera in a simpler manner.

[0005] For the problems stated above, there is considered a service for making a print of images based on image data obtained through photographing by, for example, a digital camera. This service is one wherein a customer takes a storage medium (media) storing image data to a photofinisher where image data are outputted as a print, and the print is handed to the customer in exchange for a fixed charge. A customer who utilizes service of this kind does not need to own any specific equipment for making a print of images, and can obtain a print in a simple way as in the case of silver halide photography.

[0006] For obtaining high image quality equal to that in silver halide photography when forming an image based on image data obtained through photographing by a digital camera, a simple apparatus such as a general purpose printer which can be connected to a personal computer is insufficient, and an image forming apparatus with higher accuracy is needed. Since an image forming apparatus of this kind is relatively expensive at this stage, possibility for this image forming apparatus to be spread widely in a short period of time is low. Therefore, it is considered that the service to make a print from images of a digital camera will take, before wide introduction of the image forming apparatuses, a form wherein pieces of information including image data and order contents are received from customers at plural intermediating stores, for example, through print order receiving apparatuses each having a storage unit, and then, the information are sent to an image forming apparatus installed at a specific location to make prints of desired images so that prints of images may be handed to customers through the intermediating stores where the orders were received.

[0007] Since the information relating to print order is sent to the image forming apparatus in the form of electronic signals, it is not possible to grasp the current situation of the processing that is based on the print order, which is a problem.

[0008] If by any chance troubles happen on the part of the image forming apparatus, there is a fear that image data synthesized based on print order information may be lost. In terms of this point, unlike a negative film in silver halide photography, a customer owns original data for image data of a digital camera in many cases. It is therefore possible to consider that image data are synthesized newly based on the original data. However, it takes time to input and synthesize data newly again from the beginning, resulting in a problem. Further, it can happen that image data are erased on the part of a customer after placing an order, and in this case, printing of synthesized images is impossible for all time.

[0009] If print making processing is made to be started at the moment when a charge for the print order is paid, it is possible to avoid unwanted processing when the print order is canceled by a customer, which is convenient.

SUMMARY OF THE INVENTION

[0010] In view of the aforesaid problems in the prior art, an object of the invention is to provide an order situation tracing system capable of grasping print order processing situation for images obtained through, for example, a digital camera and a print order receiving apparatus and to provide an image forming apparatus to make it possible to grasp a print order processing situation.

[0011] The above objects can be attained by the following structures.

(1-1) An order situation tracing system for tracing a processing situation for a print order, comprises:

a detector connected to at least one of print order receiving apparatus which is capable of outputting image data and an image forming apparatus which forms a print based on a print order information outputted from the print order receiving apparatus respectively and to detect the processing situation for the print order from receipt of the print order to completion of forming the print based on the signal from the print order receiving apparatus and from the image forming apparatus;

a memory to store backup data regarding the print order in accordance with the processing situation for the print order; and

an output device to output information regarding the processing situation detected by the detector.

(1-2) In the order situation tracing system of (1-1), the backup data include at least one of original image data and image data subjected to a process based on the print order information.

(1-3) In the order situation tracing system of (1-2), the process is an image synthesis.

(1-4) In the order situation tracing system of (1-1), the order situation tracing system further comprises:

a controller to input information indicating a situation that charges relating to the print order outputted from the print order receiving apparatus have been paid and to output a control signal in response to the input so that the image forming apparatus starts forming the print.

(1-5) In the order situation tracing system of (1-1), the output device outputs the information regarding the processing situation through a network.

(1-6) In the order situation tracing system of (1-5), the information regarding the processing situation is displayed in a home page accessed through an internet.

(1-7) In the order situation tracing system of (1-1), the detector detects a situation that a print formation is completed based on information which is sent from the image forming apparatus and indicates completion of forming a print.

(1-8) In the order situation tracing system of (1-1), the detector detects a situation based on a signal in which a processing situation outputted from the image forming apparatus is correlated with information for identifying image data.

(1-9) An order situation tracing system for tracing a processing situation for a print order, comprises:

at least one of print order receiving apparatus capable of outputting image data and print or-

der information;

an image forming apparatus to form a print based on the print order information outputted from the print order receiving apparatus;

a detector connected to at least one of print order receiving apparatus and the image forming apparatus so as to receive a signal from the print order receiving apparatus and from the image forming apparatus respectively and to detect the processing situation for the print order from receipt of the print order to completion of forming the print based on the signal from the print order receiving apparatus and from the image forming apparatus;

a memory to store backup data regarding the print order in accordance with the processing situation for the print order; and

an output device to output information regarding the processing situation detected by the detector.

(1-10) In the order situation tracing system of (1-9), the order situation tracing system further comprises:

a display connected with the print order receiving apparatus and to input and indicate information regarding the processing situation.

(1-11) In the order situation tracing system of (1-9), the image forming apparatus outputs information indicating the completion of forming a print and the detector detects a situation that a print formation is completed based on the information which is sent from the image forming apparatus and indicates the completion of forming a print.

(1-12) In the order situation tracing system of (1-11), the image forming apparatus outputs a signal in which a processing situation outputted from the image forming apparatus is correlated with information identifying image data and the detector detects a situation based on the signal.

(1-13) A print order receiving apparatus, comprises:

an output device capable of outputting image data and print order information;

a connecting section through which the print order receiving apparatus is connected with an image forming apparatus and with an order situation tracing apparatus, wherein the image forming apparatus forms a print based on the print order information outputted from the output device and the order situation tracing apparatus detects the processing situation for the print order from receipt of the print order to completion of forming the print based on a signal from the print order receiving apparatus and from the image forming apparatus, stores backup data relating to the print order in accordance with the processing situation and outputs infor-

mation regarding the detected processing situation; and
a display to input and indicate information regarding the processing situation.

(1-14) An image forming apparatus, comprises:

a printer to form a print based on print order information and image data both outputted from a print order receiving apparatus; and
an output device to output information indicating completion of forming a print to an order situation tracing apparatus when the print formation by the printer is completed;

wherein the image forming apparatus is connected with the print order receiving apparatus and the print order situation tracing apparatus.

[0012] Incidentally, it is preferable that the aforesaid backup data include original image data or image data processed based on the aforesaid print order information.

[0013] Further, the processing mentioned above also includes forming of images as they are based on image data without conducting synthesizing, although it can be synthesis of images.

[0014] If the order situation tracing system has therein a control means which inputs information that is outputted from the print order receiving apparatus and shows that a charge relating to the print order has been paid, and if the image forming apparatus starts print making processing when the control means outputs control signals in response to the inputting, it is possible to avoid that processing has already been started when the order is canceled, which is convenient.

[0015] Further, if the output means outputs information relating to the processing situation through a network, it is possible to confirm the current processing situation in, for example, a print order receiving apparatus, which is convenient.

[0016] Further, if the information relating to the processing situation is accessible on Internet web pages, a customer can confirm the current processing situation by accessing the web pages through a personal computer, which is convenient.

[0017] Incidentally, it is preferable if the print order receiving apparatus has a display means which inputs information relating to the processing situation to display it. In this case, the display means is not limited to a display but it can be a printer.

[0018] For the purpose of attaining the aforesaid object, the order situation tracing system of the invention comprises a detection means which is connected to at least one print order receiving apparatus capable of outputting image data and print order information and to an image forming apparatus which forms a print based on the print order information outputted from the print order

receiving apparatus, and detects processing situation from print order acceptance to the end of printing based on the signals from the print order receiving apparatus and from the image forming apparatus, a storage means which stores backup data relating to print order in accordance with the processing situation, and an output means which outputs information relating to the processing situation detected by the detection means.

[0019] The order situation tracing system of the invention comprising a detection means which is connected to at least one print order receiving apparatus capable of outputting image data and print order information and to an image forming apparatus which forms a print based on the print order information outputted from the print order receiving apparatus, and detects processing situation from print order receipt to the end of printing based on the signals from the print order receiving apparatus and from the image forming apparatus, a storage means which stores backup data relating to print order in accordance with the processing situation, and an output means which outputs information relating to the processing situation detected by the detection means, makes it possible to grasp the current situation of print making processing, and to continue processing immediately based on backup data stored in the storage means even when processed data are lost by unexpected accident.

[0020] Further, above objects may be attained by the following preferable structures.

(Structure 2-1)

[0021] A order situation tracing system having therein a detection means which is connected with at least one print order receiving apparatus capable of outputting image data and print order information and with an image forming apparatus which forms a print based on print order information outputted from the print order receiving apparatus, and detects the processing situation covering from print order receipt to completion of printing, a storage means which stores backup data relating to print order in accordance with the processing situation, and an output means which outputs information relating to the processing situation detected by the detection means.

(Structure 2-2)

[0022] The order situation tracing system according to Structure 2-1, wherein the backup data include image data processed based on original image data or the print order information.

(Structure 2-3)

[0023] The order situation tracing system according to Structure 2-1 or Structure 2-2, wherein the processing is synthesizing of images.

(Structure 2-4)

[0024] The order situation tracing system according to either one of Structure 2-1 - Structure 2-3, wherein a control means which inputs information showing that charges relating to the print order outputted from the print order receiving apparatus have been paid, and the image forming apparatus starts print making processing when the control means outputs control signals with response to the input.

(Structure 2-5)

[0025] The order situation tracing system according to either one of Structure 2-1 - Structure 2-4, wherein the output means outputs information relating to the processing situation through Network

(Structure 2-6)

[0026] The order situation tracing system according to Structure 2-5, wherein the information relating to the processing situation is accessible on a web page of Internet.

(Structure 2-7)

[0027] A print order receiving apparatus having a display means which is connected with the print order receiving apparatus described in Structure 2-5 or 2-6, and inputs information relating to the processing situation and displays it.

BRIEF DESCRIPTION OF THE DRAWINGS

[0028] Fig. 1 is a top view of a print order receiving apparatus relating to the first embodiment.

[0029] Fig. 2 is a diagram showing how print order receiving apparatus 10 relating to the present embodiment and an outer image forming apparatus are connected to each other.

[0030] Fig. 3 is a perspective view of a print making apparatus (image forming apparatus) relating to the present embodiment.

[0031] Fig. 4 is a block diagram showing the structure of the print making apparatus.

[0032] Fig. 5 is an example of display on liquid crystal image plane 11.

[0033] Fig. 6 is an example of display on liquid crystal image plane 11.

[0034] Fig. 7 is an example of a duplicate of a print order.

[0035] Fig. 8 is a diagram showing the state of display which is made on liquid crystal image plane 11 by print order receiving apparatus 10 that accessed order data base formed on server 30 by detecting only necessary data.

[0036] Fig. 9 is an illustration explaining how to detect

order situation (processing situation).

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

[0037] The invention will be explained as follows, referring to the embodiment. Fig. 1 is a top view of a print order receiving apparatus relating to the present embodiment. In Fig. 1, print order receiving apparatus 10 is in a shape of a rectangular plate, and it has liquid crystal image plane 11 of a touch panel type serving as an input means and a display means, on its top surface, and has power supply switch 17 on its side face (lower portion in Fig. 1). Further, on the side (upper portion in Fig. 1) facing the aforesaid side face of the print order receiving apparatus 10, there are formed two openings 12 and 13. Data reading unit (reading means) 14 is formed in the opening 12 and reading/writing unit 15 is formed in the opening 13.

[0038] The opening 12 freely accepts removable medium C such as, for example, PC card storing image data corresponding to images obtained through photographing by a digital camera, while, the opening 13 freely accepts removable medium M such as, for example, PC card serving as a storage means or a storage medium. It is preferable that removable medium M is greater than removable medium C in terms of storage capacity for each of them under the condition of no stored data, namely, under the condition of empty. Incidentally, the removable medium C and removable medium M are not limited to PC card and IC card shown here.

[0039] Fig. 2 is a diagram showing how print order receiving apparatuses 10, 10' and 10" relating to the present embodiment and outer image forming apparatuses 20 and 20' are connected to each other. In Fig. 2, print order receiving apparatus 10 installed in intermediating store A, print order receiving apparatus 10' installed in intermediating store B and print order receiving apparatus 10" installed in intermediating store C are connected to server 30 through Internet NT, and the server 30, on the other hand, is connected to first image forming apparatus 20 and second image forming apparatus 20'.

[0040] Print order receiving apparatuses 10 has therein reading unit 14 capable of reading image data from removable medium C inserted in opening 12, reading/writing unit 15 capable of storing image data and print order information which will be stated later in removable medium M inserted in opening 13 and CPU 16 connected to the aforesaid units. The CPU 16 is capable of inputting prescribed information from touch panel type liquid crystal image plane 11 and is capable of displaying prescribed images on the liquid crystal image plane 11 through an unillustrated driver.

[0041] Print order receiving apparatuses 10 has therein CPU 16, interface 17 of a type of RS-232C or USE which makes it possible to communicate with outer printer 19, and interface (for example, LAN terminal) 18

which makes it possible to communicate between CPU 16 and outer image forming apparatus 20 through Internet NT. Incidentally, the interface 18 may include also a dial-up router. Since the Print order receiving apparatuses 10' and 10'' are of the same structure, detailed explanation thereof will be omitted.

[0042] Fig. 3 is a perspective view of a print making apparatus (image forming apparatus) relating to the present embodiment. Though there is illustrated print making apparatus 20 wherein a print is made by exposing and developing a light-sensitive material, in this case, as an example of the first image forming apparatus, the invention is not limited to this, and print making apparatuses of an ink jet system and an electrophotographic system, for example, are also acceptable, provided that prints can be made based on image information. In the invention, in particular, a system to use a light-sensitive material is preferable. Incidentally, since the second image forming apparatus 20' has the same structure, its detailed explanation will be omitted here.

[0043] Print making apparatus 20 in the present embodiment is equipped on the left side of its main body 202 with magazine loading section 203. Inside the main body 202, there are provided exposure processing section 204 which exposes a light-sensitive material representing a storing medium and print making section 205 which processes the exposed light-sensitive material and dries it to make a print, and a print thus made is ejected on tray 206 provided on the right side of the main body 202. Further, control section 207 is provided above the exposure processing section 204 inside the main body 202.

[0044] On the main body 202, there is arranged CRT 208 which constitutes a display means that displays images of image information from which a print is to be made. On the left side of the CRT 208, there is arranged film scanner section 209 representing an image reading section which reads a transmission type document, and on the right side thereof, there is arranged reflection type document input apparatus 210.

[0045] As a document to be read by the film scanner section 209 or by the reflection type document input apparatus 210, there is given a photographic light-sensitive material representing a color negative film, a color reversal film, a black and white negative film and a black and white reversal film, on which the image data obtained through photographing by an analog camera are stored. The image data can be converted by a film scanner of the film scanner section 209 into digital information which is made to be image data. When the photographic light-sensitive material is a color photographic paper, it can be made to image data by a flat bed scanner of the reflection type document input apparatus 210.

[0046] At the position of control section 207 of the main body 202, there is provided image transmission section 214. Into the image transmission section 214, it is possible to insert PC card 213a and floppy disk 213b in which image data are stored, in addition to the afore-

said removable medium M (IC card), and image data of the inserted storage medium are read out.

[0047] On the front side of CRT 208, there is arranged operation section 211 which is provided thereon with information input means 212 that is constituted, for example, with a touch panel.

[0048] Further, on the main body 202, there is provided storage medium writing section 215, and there is provided writing means K (Fig. 4) for writing image data in a storage medium on magnetic storage media or on optical storage media.

[0049] As a storage medium that stores image data, there are actually given removable media such as a multi-media card, a memory stick, MD and CD-ROM, to which, however, the invention is not limited.

[0050] Incidentally, operation section 211, CRT 208, film scanner section 209, reflection type document input apparatus 210, image transmission section 214 and storage medium writing section 215 are provided solidly on main body 202 to be the structure of the apparatus. However, either one or more of them may also be provided separately.

[0051] Fig. 4 is a block diagram showing the structure of a print making apparatus.

[0052] Control section 207 of print making apparatus 20 conducts reading of document information coming from film scanner section 209 or from reflection type document input apparatus 210, based on command information from information input means 212, and obtains image information to display it on CRT 208.

[0053] The print making apparatus 20 has data accumulation means 271 and template storage means 272. It is possible to store image data obtained through reading from removable medium M and print order information (information about frames for printing and about the number of prints to be made, and information about print sizes, which will be explained in detail later) corresponding to the image data in the data accumulation means 271 to accumulate them in succession. Frame images from developed negative film N that is obtained by developing a negative film exposed by an analog camera are inputted from the film scanner section 209, while, frame images from print P that is obtained by printing frame images on a photographic paper to process are inputted from the reflection type document input apparatus 210.

[0054] In the template storage means 272, there are stored, in advance, data of at least one template image for setting a synthesizing area with a background image and data relating to the number corresponding to the aforesaid data. Through operations of an operator, or based on the number of a template image included in print order information, there is specified a prescribed template image from plural template images stored in the template storage means 272, then, image data are synthesized by the selected template image, and a print is made based on the synthesized image data. This synthesis by the template image is carried out through a

Chroma key method which is widely known.

[0055] The control section 207 has image processing section 270 where image information is image-processed to form image information for exposure which is sent to exposure processing section 204. In the exposure processing section 204, a light-sensitive material is exposed to images, then, this light-sensitive material is sent to print making section 205 where the exposed light-sensitive material is processed and dried, thus, a print is made.

[0056] Image transmission section 214 of the print making apparatus 20 is equipped with reading means 230 which reads image data on removable medium M to transmit and with communication means 240 capable of communicating with server 30. The reading means 230 can read stored image data from removable medium M inserted in the image transmission section 214 and transmit them to the control section 207 composed of a microcomputer. On the other hand, the communication means 240 can input image data accumulated in server 30.

[0057] On the print making apparatus 20, it is possible to conduct ordinary print P1, file print P2 and index print P3, based on image data stored in removable medium M and print order information stored to correspond to the aforesaid image data.

[0058] Ordinary print P1 is one to make one print from one piece of image data. In this ordinary print P1, it is possible to make print P1 in ordinary print size decorated by a photo-frame, by establishing a prescribed synthesizing area in a background image (template image) having a certain pattern, for example, and by composing one frame image with the synthesizing area to be stored. By storing one piece of image data in one print P1 as mentioned above, it is possible to make, for example, a post card, a calendar, or a favorite and specific print requested by a customer which can be put in a purse or in a communication-ticket holder.

[0059] File print P2 is one to make one large-sized file from plural frame images. Even in the case of this file print P2, it is possible to set synthesizing areas at 3 - 10 locations, for example, on the background image having prescribed patterns, and to synthesize one frame image with each of three synthesizing areas for storage. Further, in the file print P2, it is also possible to store, in the background, perforation lines which make it possible to cut easily and nicely to make a favorite and specific print which can be put in a purse or in a communication-ticket holder.

[0060] Index print P3 is one to make one print in a prescribed size for all images based on image data, so that the print may be helpful for reordering of prints.

[0061] In this print making apparatus, when making prints from images on the developed negative film or on the developed reversal film, the images are scanned by a film scanner of the film scanner section 209 to be converted into digital information, and thereby, a print is made in the same way through control section 207.

[0062] Next, operations in the present embodiment will be explained, referring to Figs. 1 and 2. Print order receiving apparatuses 10, 10' and 10" relating to the present embodiment may also be installed in convenience stores. Let it be assumed that a customer who desires prints took the removable medium C in which image data corresponding to images obtained through photographing by its digital camera to intermediating store A in this case. Incidentally, any type of removable medium will do provided that the removable medium is a storage medium which is portable and is capable of storing image data. With regard to operations relating to the print order, they are assumed to be conducted by the customer itself in the present embodiment, although they may also be conducted by an operator in the intermediating store.

[0063] In the case of ordering prints, when a customer turns on power supply switch 17 for print order receiving apparatus 10, CPU 16 representing a preparation means for preparing order information is initialized to be in the operation state, and it first displays initial images on liquid crystal image plane 11.

[0064] Now, when the customer inserts removable medium C serving as a removable medium into opening 12 of print order receiving apparatus 10, an unillustrated sensor detects that the removable medium C has been fixed to the position where image data can be read, and transmits the signals which can be read. In response to the signals which can be read, reading apparatus 14 reads image data stored in removable medium C. CPU 16 can store the image data thus read out in removable medium M first, and can further display all images corresponding to image data stored in removable medium C on an image plane of liquid crystal image plane 11 on an index basis, based on image data read out.

[0065] When full-sized image data and thumbnail image data whose amount of data is smaller than that of the full-sized image data are stored in removable medium C for the same image, images are displayed based on thumbnail image data in the case of index display. When image data whose amount of data is small are not stored, it is also possible to generate image data whose amount of data is small from the full-sized image data read out to display on an index basis.

[0066] The customer who observes this display selects images for which the customer desires prints by pressing the image plane of liquid crystal image plane 11. In this case, if a color of the frame, for example, for the image pressed on liquid crystal image plane 11 is changed by CPU 16, the selected image can be recognized at a glance, which is convenient.

[0067] When the customer presses "NEXT" button 11a (see Fig. 5) displayed at the lower portion on the right side on liquid crystal image plane 11 after completion of the selection, CPU 16 displays the template image stored (thinned-out image data relating to fine template image, hereinafter referred to as thinned-out image data) and the number corresponding thereto on an index

basis. The customer who observes this display selects a template image which is desired by the customer to be synthesized with an image of a subject by pressing an image plane of liquid crystal image plane 11. In this case, if a color of the frame, for example, for the image pressed on liquid crystal image plane 11 is changed by CPU 16, the selected image can be recognized at a glance, which is convenient. Incidentally, when no synthesis is desired, the number 9 which instructs not to synthesize with a template image has only to be pressed.

[0068] When the customer presses "NEXT" button 11a (see Fig. 5) displayed at the lower portion on the right side on liquid crystal image plane 11 after completion of the selection, CPU 16 synthesizes thumbnail image data of images of a subject with thinned-out image data, and displays the synthesized image on liquid crystal image plane 11 as shown in Fig. 6 based on the synthesizing data. Since any data serving as sub-information is small in terms of a volume, time required for synthesizing processing is short, and large memory is not needed for synthesizing.

[0069] Sub-information in this case means thumbnail image data and the following information.

- Position of image synthesizing (coordinates data of upper left-hand position of the image to be inserted, for upper left-hand position (the origin coordinates) of the template image in which the image is inserted)
- Longitudinal and lateral sizes (pixel number) of the image to be inserted
- Magnification rate (%) of the image to be inserted
- Unique number such as a design number of the template design to be used
- Name of data file for the image to be inserted
- Storage path (preserved place) for data of image to be inserted
- Color coordinates of opening (mask section) to be synthesized on a template (data to be used for processing to display an inserted image by making it to be transmitted through designated color coordinates)

[0070] In this case, the customer can draw images G1 and G2 in desired color and shape on liquid crystal image plane 11 by the use of touch pen TP. The images G1 and G2 thus drawn are inputted in CPU 16 through liquid crystal image plane 11 of a touch panel type, and are displayed on liquid crystal image plane 11. In this case, CPU 16 can convert the image G2 into character data by the use of OCR function and it can also display. Since the OCR function is well-known, its details will not be described below.

[0071] Therefore, the synthesized image is displayed on liquid crystal image plane 11 in the form of final print made by image forming apparatus 20. Therefore, the customer can confirm the finish at a glance, thus, it is

possible to make prints which more satisfy demands of users. When ordering operations for images for which prints are desired are completed by doing the same operations, the liquid crystal image plane 11 displays contents of the order (not shown) for confirmation. So, the user who desires no change presses NEXT button 11a as a confirmation operation.

[0072] When the button 11a is pressed, CPU 16 representing an output means judges that the operations for confirming print order have been done, and conducts the following operations. First, CPU 16 stores all information about the order in removable medium M. Namely, removable disk M is used as a hard disk.

[0073] Here, the information about the order includes, for example, the following.

- Position of image synthesizing (coordinates data of upper left-hand position of the image to be inserted, for upper left-hand position (the origin coordinates) of the template image in which the image is inserted)
- Longitudinal and lateral sizes (pixel number) of the image to be inserted
- Magnification rate (%) of the image to be inserted
- Unique number such as a design number of the template design to be used
- Name of data file for the image to be inserted
- Storage path (preserved place) for data of image to be inserted
- Color coordinates of opening (mask section) to be synthesized on a template (data to be used for processing to display an inserted image by making it to be transmitted through designated color coordinates)
- Customer's name, phone number, address, zip code and E-mail address
- The number of prints
- Print size
- Texture of a print (glossy, silk)
- Print charge
- Desired date of finish

[0074] Further, CPU 16 reads a part of information about the order out of removable medium M, and transmits data to printer 19 through interface 17 to make the printer to print an order duplicate shown in Fig. 7. On the order duplicate, there are described information about an intermediating store (name, address and phone number) D1, information about a customer (date of order, receipt number, name and phone number) D2, information about details of charges for prints D3 and information about date of finish D4. Further, a rough synthesizing image may also be formed on the order duplicate based on synthesizing data of thumbnail image data of subject images and thinned-out image data. The order duplicate of this kind is received and taken back by the customer, and then, is brought to the store when prints are finished to be exchanged for the prints together-

er with charges. Incidentally, the printer 19 can output also a duplicate about an intermediating store and a duplicate on the part of image forming apparatus 20.

[0075] Further, CPU 16 communicates with server 30 through interface 18 and Internet NT, and transmits information necessary for prints which are read out of removable medium M. In this case, information necessary for prints include main information composed of image raw data, the number of a template image to be synthesized and a synthesizing position, image data relating to handwritten images G1 and G2 (or, character data including a font and a size), synthesizing information in a text form composed of synthesizing position and a rate of magnification and order information relating to the number of prints. Namely, image raw data and fine template image data are not synthesized on the part of print order receiving apparatus 10, and therefore, time for synthesizing is not necessary, a memory with large capacity for synthesizing is not necessary, and communication time is shortened to reduce communication cost.

[0076] It has been cleared by the experiments made by inventors of the invention that image data relating to full-sized images obtained through photographing by a digital camera having CCD with about two million pixels have a volume of about 1 MB, and therefore, a memory of about 7 MB is necessary to synthesize the aforesaid image data with a fine template image even in the case of a post card size. On the contrary, in the present embodiment, a memory with a capacity a little over 1 MB makes it possible to transmit data for prints, which, therefore, makes it possible to provide a low cost print order receiving apparatus.

[0077] Now, when a charge for ordered prints is paid by a customer at intermediating store A, a clerk of the intermediating store A can input a key code composed of prescribed alphanumeric characters from print order receiving apparatus 10 through liquid crystal image plane 11. In this case, the print order receiving apparatus 10 sends information about collected charges to server 30. Upon receiving of the information, the server 30 representing a control means starts processing of data synthesizing. Therefore, when a customer cancels its print order, or when a wrong print order is sent, excessive processing can be avoided.

[0078] The server 30 wherein fine template image data are stored in advance conducts synthesizing with image raw data based on the number and the position of synthesizing both transmitted, and further conducts synthesizing with image data relating to handwritten image data. Though such synthesizing of image data is considered to take a considerable period of time, it is possible to conduct processing through, for example, an automatic operation at night. The image data thus synthesized are sent to first image forming apparatus 20 or to second image forming apparatus 20' from the server 30, so that prints are made.

[0079] The prints outputted from the image forming apparatus 20 or 20' are transported to intermediating

store A to be handed finally to the customer.

[0080] Incidentally, it is also considered that the first image forming apparatus 20, for example, conducts synthesizing by using highly fine template images, while, the second image forming apparatus 20' conducts synthesizing by using ordinary fine template images. In this case, when the server 30 judges, based on the template number of synthesizing information, that synthesizing with highly fine template images is desired, the server 30 can transmit image data to the first image forming apparatus 20 to make it to form images, while, when the server 30 judges that synthesizing with ordinary fine template images is desired, the server 30 can transmit image data to the second image forming apparatus 20' to make it to form images efficiently. In addition, it is also possible to use properly the first image forming apparatus 20 and the second image forming apparatus 20' in accordance with customers requests, by using, for example, the first image forming apparatus 20 to form images on paper for exclusive use and by using the second image forming apparatus 20' to form images on cloth.

[0081] Further, an order situation tracing system relating to the present embodiment will be explained as follows. Print order receiving apparatus 10 can input information concerning order situation from server 30 through Internet NT in the mode stated below. In the present embodiment, server 30 representing a detection means detects whether print order has been received based on signals from the print order receiving apparatus 10 or not, whether prints have been completed based on signals from image forming apparatus 20 or not, and whether the prints have been sent to an intermediating store or not, for each print order, and it stores these information in order data base formed in the server 30 representing a storage means.

[0082] Fig. 8 is a diagram showing the situation wherein print order receiving apparatus 10 that accessed order data base formed on server 30 extracts necessary data based on detection items inputted by an operator and displays the necessary data outputted from the server 30 representing an output means on liquid crystal image plane 11. In Fig. 8, there is shown the current situation of the print order for which the order has been received but prints have not been sent out, as a detection item. On the detection item, a name of an orderer and the date of order can be added or changed at any time. With regard to the displayed print order in the first line, it is understood, by confirming "ORDER STATE MONITOR", that prints have been completed but they have not been sent out. On the other hand, with regard to the print order in the second line, it is understood, by confirming "Order state monitor" in the same way, that prints have not been completed yet.

[0083] In the present embodiment, it is possible to learn the current state of processing at a glance, by observing "ORDER STATE MONITOR" on print order receiving apparatus 10, as stated above, thus, it is possible

to tell the current state to the customer for its request, which is convenient. Incidentally, the server 30 can make the order situation to be accessible on Internet web pages. In this case, each customer can confirm immediately its print order situation on its own personal computer even when print order receiving apparatus 10 is not available, which is convenient. Incidentally, in this case, if a key word is allocated to each customer, it is possible to transmit the current state for only the print order of the customer based on the key word inputted by the customer, which protects privacy.

[0084] Further, the server 30 preserves backup data for each processing step. For example, in the case of receiving print orders, image data sent by print order receiving apparatus 10 and synthesizing information including the template number are preserved as backup data. Then, after the image data are synthesized, image data after the synthesizing are preserved as backup data. Though these backup data are erased simultaneously with completion of sending of prints, they may also be preserved in another recording medium. If the state of preservation of backup data is stored in an order data base stored in server 30, it is possible to confirm existence of backup data promptly, which is further convenient.

[0085] Next, how to detect order situation (processing situation) will be explained by using Fig. 9 and by showing exchange of information between server 30 representing a detection means and an image forming apparatus. Incidentally, in Fig. 9, a center Web server is connected between print order receiving apparatus 10 and server 30 in Fig. 1, which is a difference between Fig. 9 and Fig. 1.

[0086] From each print order receiving apparatus 10 (or 10' or 10''), information necessary for print is sent to a center Web server, then, the center Web server thaws automatically its compressed file to divide it into an image file and an order information file, and from the order information file, the following information and information expressing the status of "END OF ORDER RECEIVING" which means that the order has arrived safely from the print order receiving apparatus are made to be text file and are stored as the revised data in the data base in the center Web server.

- Name, Telephone No., Address, Postal No., and E-mail address of a customer
- The number of prints
- Print size
- Texture of a print (glossy, silk)
- Print charge
- Desired date of finish

[0087] Next, the center Web server sends the compressed file to server 30. The server 30 thaws the received file, and from the thawed image data and order information file, images for print output are synthesized in accordance with the transmitted order information file

by image forming apparatus 20, to be printed out by a prescribed digital printer. The print thus printed out is checked by an operator so that printing is completed, and by transmitting to the server 30 that packing for forwarding to a customer has been completed (for example, to inform the server 30 of completion of forwarding, by inputting characters of "COMPLETION OF FORWARDING" on order control PC, or by reading the barcode printed on a package for forwarding with a barcode reader, when packing for forwarding is completed), the server 30 uploads automatically the information file expressing the status of "COMPLETION OF FORWARDING" on the center Web server, for the order. On the part of the center Web server, the up-loaded information file is opened, and the status information relating to the forwarding for the order is up-dated as "COMPLETION OF FORWARDING" on the data base in the center Web server.

[0088] A customer entering order tracing content on the center Web can observe the data base up-dated constantly, and can monitor its own order situation (whether the order has arrived or not, and whether forwarding has been completed or not).

[0089] The invention has been explained above, referring to the embodiment, and the invention should not be construed to be limited to the embodiment stated above, and it is naturally possible to modify or improve the invention. For example, a print order receiving apparatus is not limited to the one shown in Fig. 1, and it may also be one like a personal computer or PDA, for example.

[0090] An order situation tracing system of the invention is connected with at least one print order receiving apparatus capable of outputting image data and print order information and with an image forming apparatus which forms a print based on print order information outputted from the aforesaid print order receiving apparatus, and has therein a detection means which detects the processing situation covering from print order receipt to completion of printing based on signals coming from the print order receiving apparatus and the image forming apparatus, a storage means which stores backup data relating to the print order in accordance with the processing situation and an output means which outputs information relating to the processing situation detected by the detection means. Therefore, it is possible to grasp the current progress of the print making processing, and even when the processed data are lost by an unexpected accident, processing can be continued immediately based on the backup data stored in the storage means, which is a point of advantage.

Claims

1. An order situation tracing system for tracing a processing situation for a print order, comprising:

- a detector connected to at least one of print order receiving apparatus which is capable of outputting image data and an image forming apparatus which forms a print based on a print order information outputted from the print order receiving apparatus respectively and to detect the processing situation for the print order from receipt of the print order to completion of forming the print based on the signal from the print order receiving apparatus and from the image forming apparatus;
- a memory to store backup data regarding the print order in accordance with the processing situation for the print order; and
- an output device to output information regarding the processing situation detected by the detector.
2. The order situation tracing system of claim 1, wherein the backup data include at least one of original image data and image data subjected to a process based on the print order information.
 3. The order situation tracing system of claim 2, wherein the process is an image synthesis.
 4. The order situation tracing system of claim 1, further comprising:
 - a controller to input information indicating a situation that charges relating to the print order outputted from the print order receiving apparatus have been paid and to output a control signal in response to the input so that the image forming apparatus starts forming the print.
 5. The order situation tracing system of claim 1, wherein the output device outputs the information regarding the processing situation through a network.
 6. The order situation tracing system of claim 5, wherein the information regarding the processing situation is displayed in a home page accessed through an internet.
 7. The order situation tracing system of claim 1, wherein the detector detects a situation that a print formation is completed based on information which is sent from the image forming apparatus and indicates completion of forming a print.
 8. The order situation tracing system of claim 1, wherein the detector detects a situation based on a signal in which a processing situation outputted from the image forming apparatus is correlated with information for identifying image data.
 9. An order situation tracing system for tracing a processing situation for a print order, comprising:
 - at least one of print order receiving apparatus capable of outputting image data and print order information;
 - an image forming apparatus to form a print based on the print order information outputted from the print order receiving apparatus;
 - a detector connected to at least one of print order receiving apparatus and the image forming apparatus so as to receive a signal from the print order receiving apparatus and from the image forming apparatus respectively and to detect the processing situation for the print order from receipt of the print order to completion of forming the print based on the signal from the print order receiving apparatus and from the image forming apparatus;
 - a memory to store backup data regarding the print order in accordance with the processing situation for the print order; and
 - an output device to output information regarding the processing situation detected by the detector.
 10. The order situation tracing system of claim 9, further comprising:
 - a display connected with the print order receiving apparatus and to input and indicate information regarding the processing situation.
 11. The order situation tracing system of claim 9, wherein the image forming apparatus outputs information indicating the completion of forming a print and the detector detects a situation that a print formation is completed based on the information which is sent from the image forming apparatus and indicates the completion of forming a print.
 12. The order situation tracing system of claim 11, wherein the image forming apparatus outputs a signal in which a processing situation outputted from the image forming apparatus is correlated with information identifying image data and the detector detects a situation based on the signal.
 13. A print order receiving apparatus, comprising:
 - an output device capable of outputting image data and print order information;
 - a connecting section through which the print order receiving apparatus is connected with an image forming apparatus and with an order situation tracing apparatus, wherein the image forming apparatus forms a print based on the print order information outputted from the output device and the order situation tracing apparatus detects the processing situation for the

print order from receipt of the print order to completion of forming the print based on a signal from the print order receiving apparatus and from the image forming apparatus, stores back-up data relating to the print order in accordance with the processing situation and outputs information regarding the detected processing situation; and
a display to input and indicate information regarding the processing situation.

14. An image forming apparatus, comprising:

a printer to form a print based on print order information and image data both outputted from a print order receiving apparatus; and
an output device to output information indicating completion of forming a print to an order situation tracing apparatus when the print formation by the printer is completed;
wherein the image forming apparatus is connected with the print order receiving apparatus and the print order situation tracing apparatus.

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FIG. 1

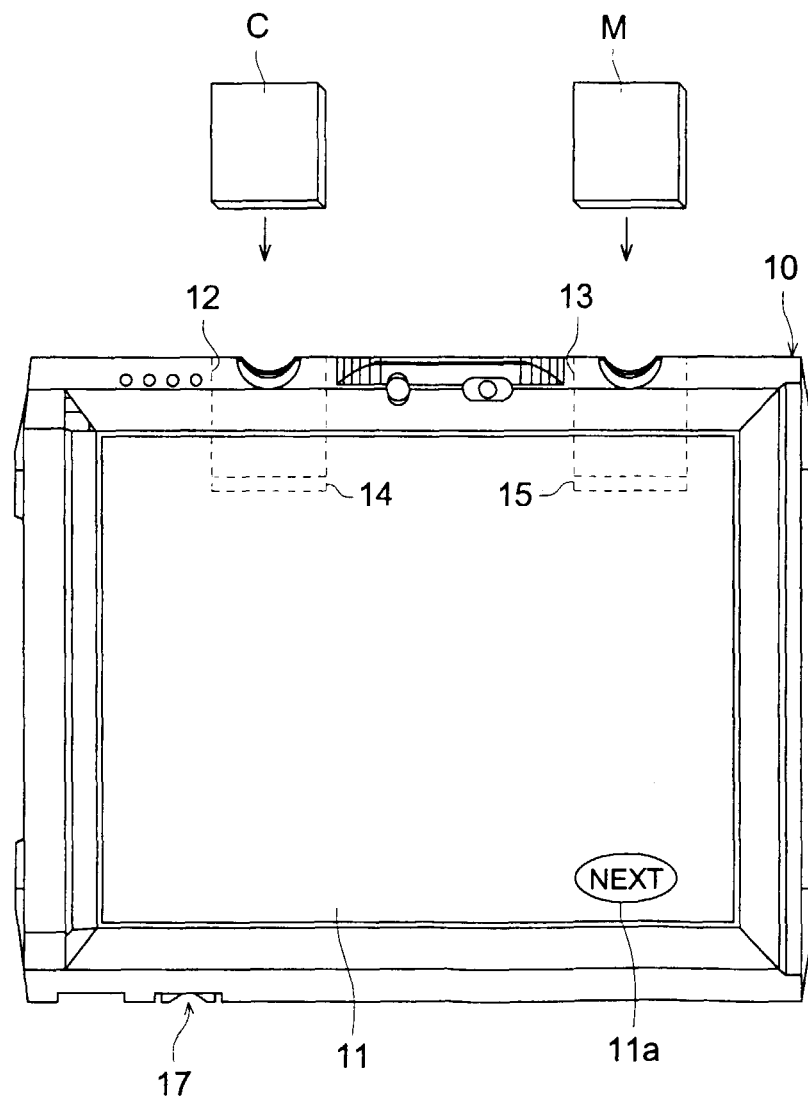


FIG. 2

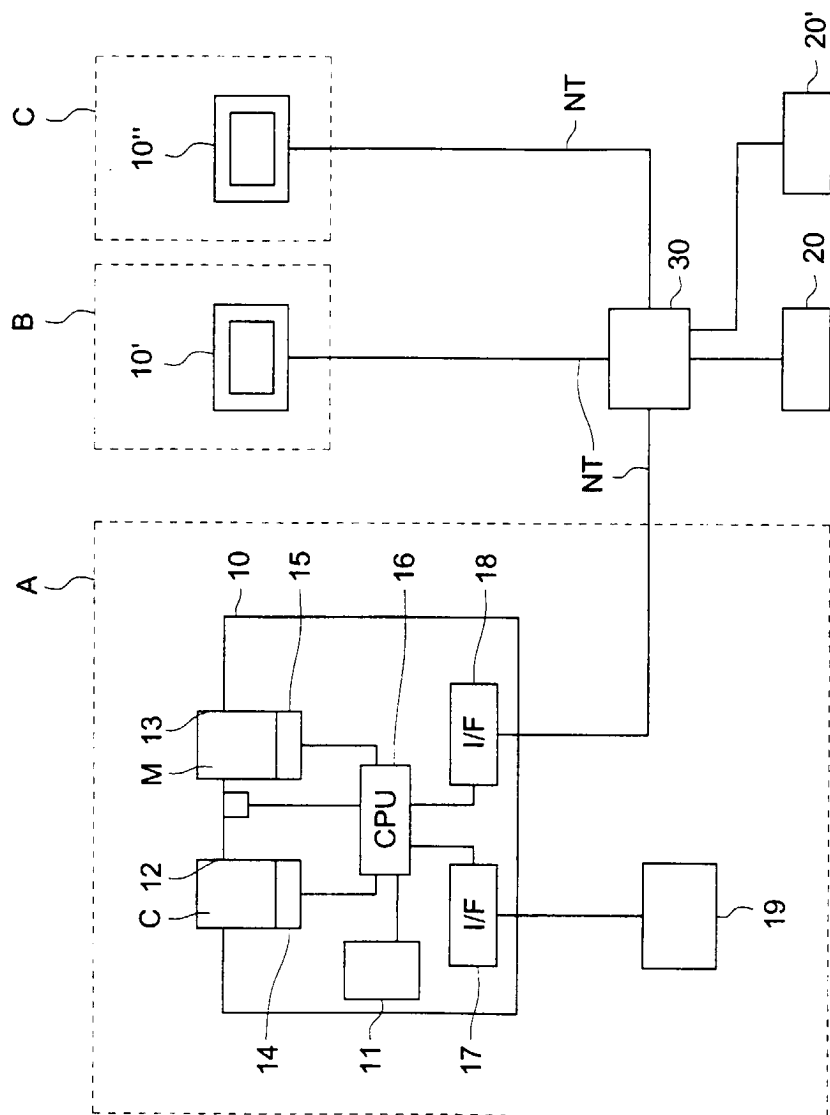


FIG. 3

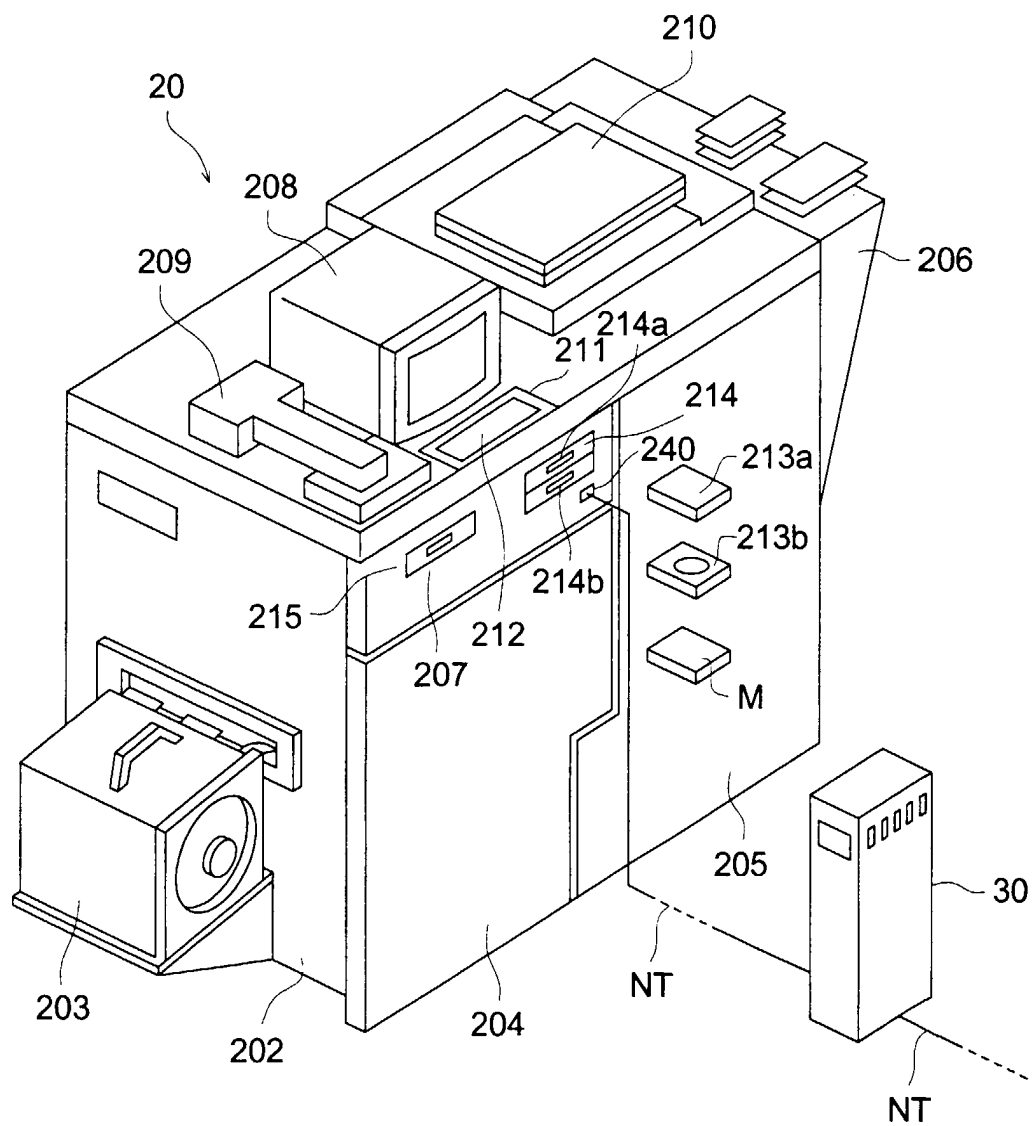


FIG. 4

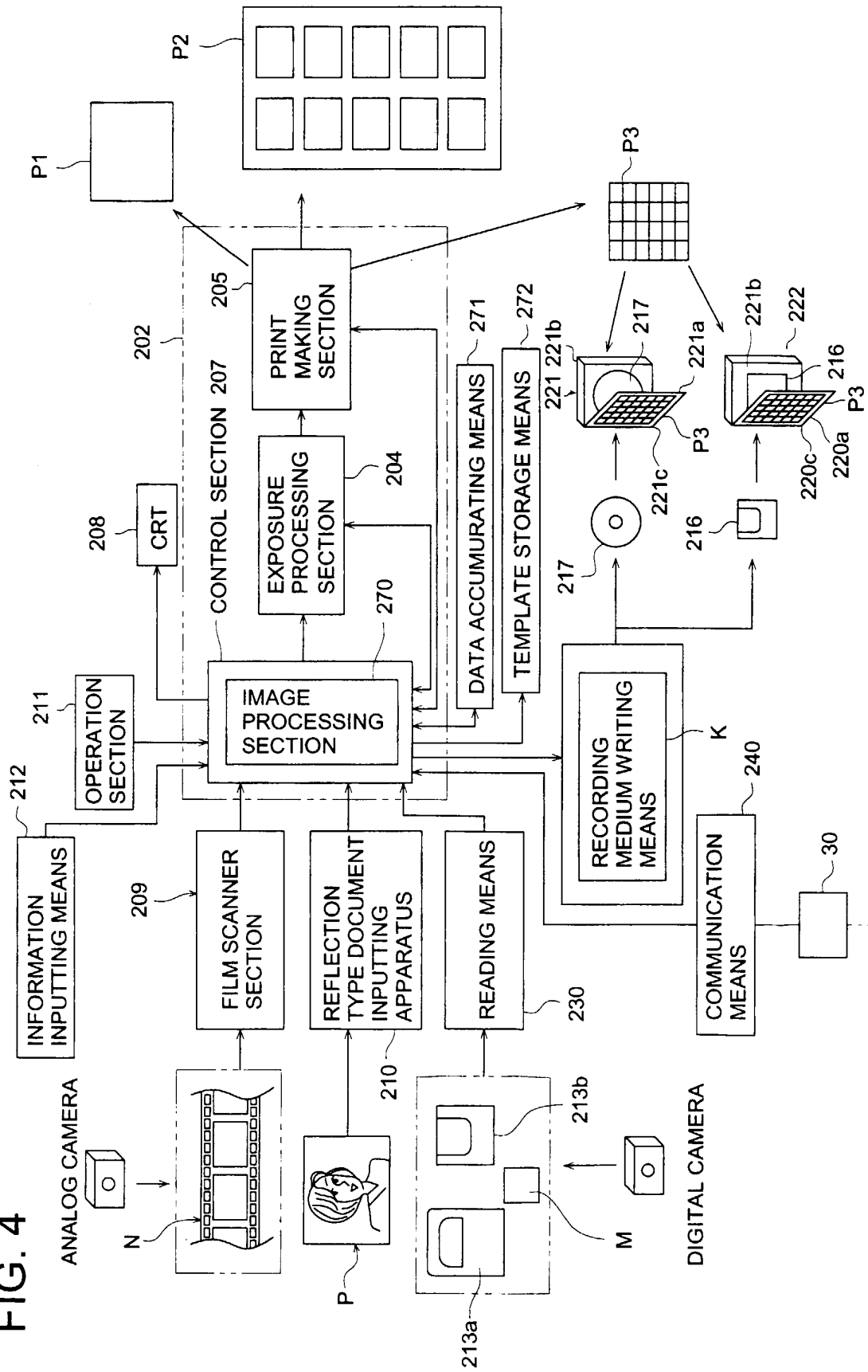


FIG. 5

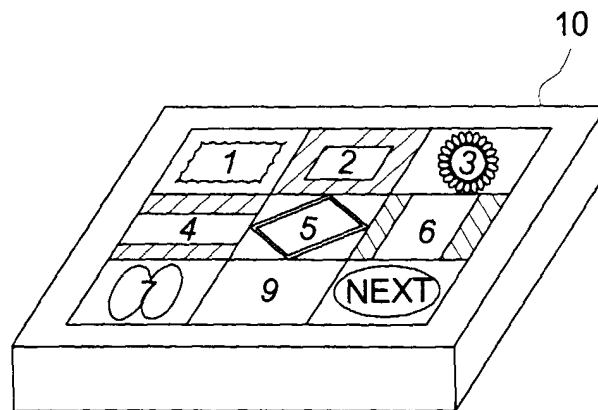


FIG. 6

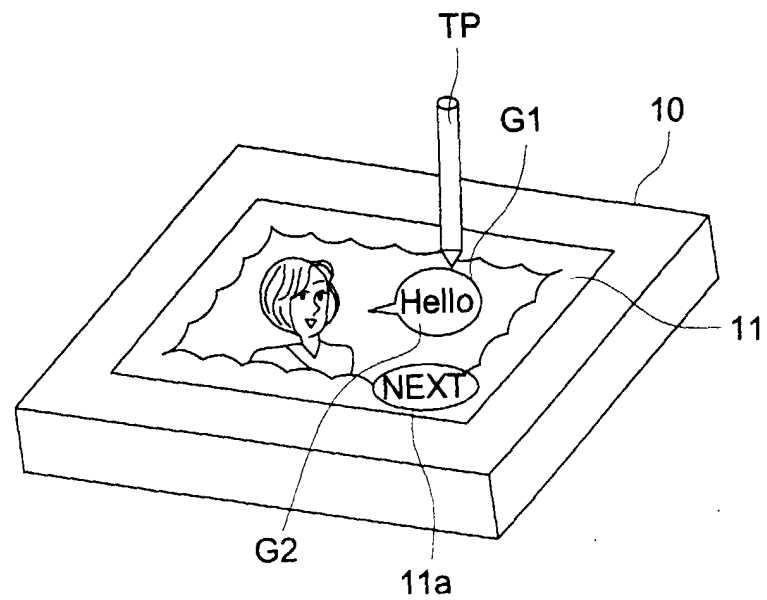


FIG. 7

REGISTRATION NUMBER 00001

XXX PRINT SHOP ○○ STORE
 △△0111-22-333,
 △△ TOWN,○○ CITY,
 〒191-0056 TOKYO

THANK YOU FOR YOUR PATRONAGE.

THE DATE OF ORDER: AUG. 25, 1999
 THE RECEIPT NUMBER FOR A CUSTOMER: 00001
 CUSTOMER NAME: YUTAKA UEDA
 CUSTOMER'S PHONE NUMBER: 00-2222-3333

CONTENTS OF YOUR ORDER ARE AS FOLLOWS.
 DESIGN NUMBER: PSC001

TYPE OF ORDER	PRINT SIZE	NUMBER OF PHOTOGRAPHS ()	UNIT PRICE
BASIC RATE			700
CHARGE FOR TECHNOLOGY			1500
POST CARD	KG	20	60
POSTAL CARD		20	80
SUBTOTAL			5000
CONSUMPTION TAX			140
SUM TOTAL			5140

THE DATE OF FINISH IS SHOWN BELOW.

POST CARD	THE DAY FOLLOWING THE DATE OF ORDER
OTHER SERVICES	3 DAYS AFTER THE DATE OF ORDER

PLEASE BE SURE TO BRING THIS RECEIPT WHEN
YOU RECEIVE PRINTS.

FIG. 8

THE DATE OF TRACING

SEPT. 10, 1999

THE DATE OF ORDER	CUSTOMER FOLDER NAME	STORE NUMBER	CUSTOMER NAME	CUSTOMER ADDRESS	CUSTOMER'S PHONE NUMBER	TYPE OF SERVICE	THE NUMBER OF PRINTS	THE NUMBER OF POSTAL CARDS	CHARGES	ORDER STATE MONITOR		
										ORDER ACCEPTANCE	PRINT	SENDING
AUG. 31, 1999	C0001	027	UEDA	OO TOWN, HACHIOJI City, TOKYO	0000-1111	POST CARD	5	5	1000	☐	☐	☒
SEPT. 1, 1999	C0002	031	UEMURA	△△ TOWN, HACHIOJI City, TOKYO	1111-2222	CALENDAR	7	0	1400	☐	☒	☒

PRINTS HAVE BEEN SENT

ELIMINATION OF STATE OF SENDING

END

FIG. 9

