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(54) [Title of the Invention] Digital Camera and Image Data Distribution System

(57) [Abstract]

[Problem] The primary purpose of the present invention is to provide a novel digital camera which is capable of appropriately guaranteeing the rights of the image photographer, and an image data distribution system utilizing the camera; further, the purpose is to provide a digital camera which is capable of easily inputting various necessary information photographer identification code, etc. in the for pay distribution of image data.

[Constitution] In a digital camera comprising a means for storing encrypted image data in memory, the storing means is caused to include a means for storing the identification code of the photographer together with the image data in data memory 21. The storing means comprises a means which conducts identity verification by utilizing the unique identification code of the photographer, which has already been stored, and a password corresponding to this identification code, and then sets up the identification code of the information inputter as the photographer's identification code. The image data distribution system comprises an image data base for registering image data sent to the network accompanied at least by the photographer's identification code; and a bank account data base for recording the account balances relative to the users of these information terminals and the photographer.

[Figure 2]

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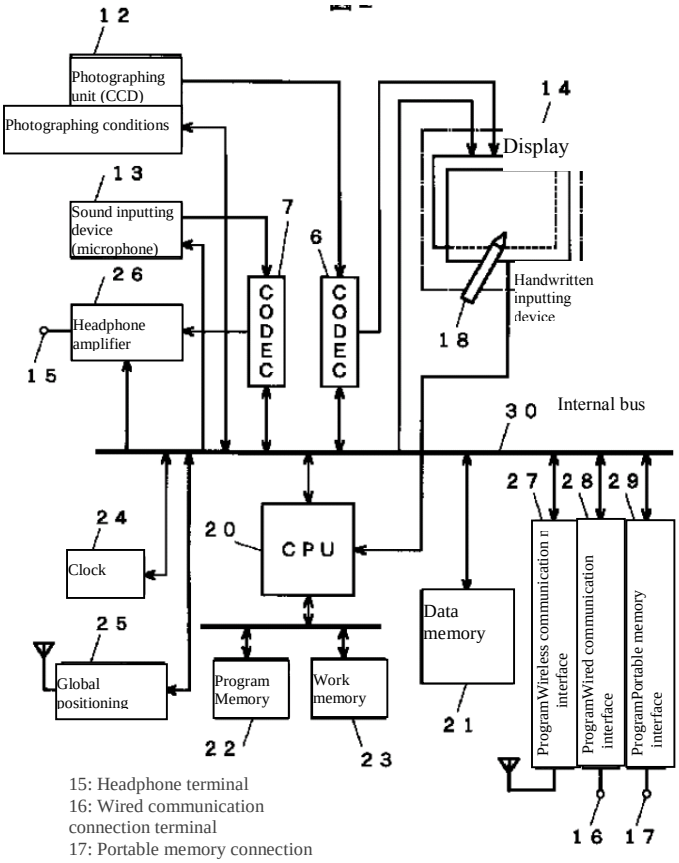

15: Headphone terminal
16: Wired communication connection terminal
17: Portable memory connection terminal
18: Inputting pen

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[Claims]
[Claim 1] Digital camera comprising a means for storing image data obtained by encrypting photographed image signals in memory,
wherein the storing means includes a means for storing the identification code of the photographer together with the image data in the memory.
[Claim 2] Digital camera of Claim 1,
wherein the storing means is a means which verifies the unique identification code of the photographer, which has already been stored, and a password corresponding to this identification code against the inputted identification code and password,
and which stores the identification code of the information inputter as the photographer's identification code, if the identity verification is confirmed.
[Claim 3] Digital camera of Claims 1 or 2,
wherein the storing means comprises a means for storing not only the identification code but also photographing position information together with the image data in the memory.
[Claim 4] Digital camera of Claim 3,
comprising a Global Positioning System as a means for detecting the photographing position information.
[Claim 5] Digital camera of any of Claims 1 to 4,
wherein the storing means comprises a means for storing necessary additional information such as a signature of the photographed person indicating their permission, photographing conditions, photographing date and time, title, memo, etc. together with the image data in the memory.
[Claim 6] Digital camera of Claim 5,
comprising a handwriting inputting device as a means for inputting the additional information.
[Claim 7] Digital camera of any of Claims 1 to 6,
wherein the storing means comprises a means for encrypting the stored information.
[Claim 8] Digital camera of any of Claims 1 to 7,
comprising a communication interface for sending the information stored by the storing means to the image data base through a network.
[Claim 9] Digital camera of any of Claims 1 to 8,
comprising a connection interface for transferring the information to an external memory.
[Claim 10] Digital camera of any of Claims 1 to 9,
wherein the external memory comprises a communication interface for sending the stored information to the image data base through a network.
[Claim 11] Image data distribution system comprising at least
an image data base for registering image data sent by the digital camera accompanied at least by the photographer's identification code,
a multiple number of information terminals connected to the data base through networks,
a bank account data base for recording the account balances relative to the users of these information terminals and the photographer,
a means for searching the image data based on the requests made by the individual information terminals and delivering the searched image data to the requesting information terminals, and
a means for withdrawing compensation for the delivered image data from the bank accounts of the users and remitting it to the bank account of the photographer.
[Detailed Explanation of the Invention]
[0001]
[Industrial Field of Application] The present invention relates to a digital camera and an image data distribution system which can be preferably utilized to exchange image data through internet or personal computer networks.
[0002]
[Prior Art] In recent years, the number of the participants in internet or personal computer networks has drastically increased. These networks provide various types of services such as electronic messages, electronic catalogue shopping, etc. Amongst these services, the Bulletin Board System is a service which enables the users to exchange information, and which is frequently utilized. Such Electronic News and Bulletin Board System is divided into several groups according to the themes for information exchange, and information can be registered or browsed by specifying a group of interest.

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[0003] In the initial stage, the exchanged information has primarily involved information written in letter characters (hereafter, referred to as "text"). However, in recent years, the communication speed and the computer processing speed have been increased, which has made it possible to exchange image data having larger data amounts than text, such as stationary images or motion images, etc. The provision of information has traditionally been conducted free of charge, but information provision methods which charge fees have started attracting attention. An example of a specific method for paying compensation to the information provider is Superdistribution, etc. (see Application Filing No.: Hei2(1990)-211406, for example).

[0004] Subsequently, the actions to be taken by the user at the time of registering/browsing information is explained below. In the case of text, at the time of registering the text, the text is inputted through the use of a keyboard into the user's terminal computer (information terminal) at hand; and the inputted text is transferred through a communication interface to a server machine of a network. At the time of browsing the text, the text is transferred from the server machine of the network through the communication interface to a terminal computer of another user, and the transferred text is shown in a display. In the case of an image, the actions taken at the time of browsing the image are the same as the actions taken relative to the text; however, the actions taken at the time of registering the image are different from the actions taken relative to the text.

[0005] First of all, an image is photographed by a digital camera, and the image is recorded as image data. Subsequently, the recorded image data are transferred to a terminal computer. In transferring image data, a communication interface is utilized in some cases, or portable memory such as memory card or Magneto-Optical disks, etc. are utilized in other cases. Additional information such as a title, etc. may be inputted and added to the image data when the image data are transferred to the terminal computer, and the resulting data are saved as photographed data. When this file is sent through the communication interface to a server machine of a network, it becomes registered.

[0006] If a fee is charged for the utilization of the registered image, the name of the photographer which shows who photographed the image is required in order to pay the compensation for the provided image. However, traditionally the name of the photographer who photographed the image has added when the image was transferred from the terminal computer to the server machine; thus it has not been guaranteed that the name of the photographer was correct. In other words, in the traditional system, someone who is not the photographer of the image but who obtains the image data falsely could add their name to the image as the photographer, and register the image in the server machine, which has been problematic.

[0007] In addition to the above, when the registered image data amount was increased, it became necessary to search the image data of interest. A multidirectional search required a large amount of additional information at the time of search. It has taken a large amount of time and labor to input such additional information, which has been problematic. When the additional information is inputted, traditionally the additional information has been recorded in a notebook which has been separately carried, the image has been transferred to the terminal computer; and then the additional information has been inputted into the terminal computer, by referring to the notebook. These operations are cumbersome, and mistakes could be easily made.

[0008] Moreover, when a person or creative contents are photographed, it has been necessary to obtain permission from the person who was photographed. Due to this reason, the signature has sometimes obtained from the photographed person in order to show their permission regarding the use of the image in question. This signature is recorded in the notebook which has been separately carried, which caused a problem that the correspondence between the image in question and the signature is question could not be guaranteed.

[0009]

[Problem that the Invention is to Solve] The primary purpose of the present invention is to provide a novel digital camera which is capable of appropriately guaranteeing the rights of the image photographer, and an image data distribution system utilizing the camera.

[0010] Another purpose of the present invention is to provide an improved digital camera with which the user can easily input various types of information (the identification code of the photographer, the signature of the photographed person indicating their permission, photographing position, photographing conditions, photographing date, title, memo, etc.) required in image data distribution involving fees.

[0011]

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[Means for Solving the Problem] The above-stated problem of the present invention can be solved by the following: Digital camera comprising a means for storing image data obtained by encrypting photographed image signals in memory, wherein the storing means includes a means for storing the identification code of the photographer together with the image data in the memory. In this way, the identification code is inputted by the photographer at the time of photographing the image, and thus the correct identification code is stored in the memory.

[0012] Furthermore, the storing means is a means which verifies the unique identification code of the photographer, which has already been stored, and a password corresponding to this identification code against the inputted identification code and password, and which stores the identification code of the information inputter as the photographer's identification code, if the identity verification is confirmed. In this way, the stored photographer's identification code can be secured to a greater degree.

[0013] Moreover, the image data distribution system is preferably a system which comprises an image data base for registering image data sent to the network accompanied at least by the photographer's identification code; a bank account data base for recording the account balances relative to the users of these information terminals and the photographer; and a means for paying compensation to the bank account of the photographer having the identification code, if an image has been utilized on an information terminal. As the photographer's identification code has been correctly added, by utilizing this system, the inconvenience of compensation paid to somebody else can be avoided.

[0014] [Effects] The storing means preferably comprises a means for storing not only the identification code but also necessary additional information such as photographing position information, signature of the photographed person indicating their permission, photographing conditions (at least one of shutter speed, diaphragm, or zoom ratio), photographing date and time, title, memo, etc.; a Global Positioning System; and a handwriting inputting device, etc. together with the image data in the memory. In this way, inputting at the photographing site is made easier.

[0015] Moreover, it is preferable to cause the storing means to include a means for encrypting the stored information. In this way, the inconvenience of alteration of the stored information can be avoided.

[0016] Moreover, the digital camera of the present invention preferably comprises either a communication interface for sending the information stored by the storing means to the image data base through a network, or a connection interface for transferring the information to an external memory. In this way, the information can be sent from the digital camera to the image data base, not through any information terminal.

[0017]

[Working Examples] A detailed explanation of the digital camera and the image data processing system of the present invention is further provided below by referring to a working example shown in the drawings.

[0018] Figure 1 shows a full view of digital camera 10. On its front panel, power switch 11, photographing unit 12 consisting of a photographing element (for example, CCD) and a lens, and sound inputting unit 13 utilizing a microphone are provided. On its rear panel, display device 14 equipped with a handwritten inputting mechanism is provided; and on its sides, headphone terminal 15, wired communication connection terminal 16, and portable memory connection terminal 17 are provided. In addition, inputting pen 18 is attached.

[0019] Display device 14 is fabricated by attaching a tablet having a transparent electrode onto the front panel of a liquid crystal display, and it functions as the handwritten inputting device. When pen 18 is caused to be in contact with the characters, marks, etc. which are displayed on the display, or pen 18 writes characters, etc., the coordinates of the contacted spots are detected. The displayed characters, marks, etc. serve as the soft key board.

Moreover, the liquid crystal display can be utilized as the finder for the photographed image signals.

[0020] Figure 2 shows a circuit block of digital camera 10. In Figure 2, reference numeral 6 represents CODEC which encrypts the image signals in photographing unit 12 to render them into image data, and decodes the data; 7 represents CODEC which encrypts the sound signals in sound inputting unit 13 to render them into sound data, and decodes the data; 20 represents a microprocessor (hereafter, referred to as "CPU") which controls the operations of camera 10; 21 represents a data memory (hard disk) which stores the image data and the photographer's identification code, etc.; 22 represents a program memory (ROM) which stores the programs executed by CPU20; 23 represents a work memory (RAM) which is utilized by

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