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(54) Method for manufacturing of identification card with a face image picture and apparatus for manufacturing the same.

(57) The method and apparatus for manufacturing ID card with face image picture according to the invention makes it possible to issue ID card with face image picture for a unspecified number of visitors in a very short time period such as several seconds and at very low cost, and said method using image inputting means for converting the face image of a person to be pictured into digital image signals and inputting said image signals in picturing section; image processing means for converting said image signals input in said image inputting means into image informations having gradation which can be output on recording medium; fixed image information inputting means for inputting particular informations recorded beforehand on printings and the like as fixed digital informations; date inputting means for inputting necessary items of digital informations such as date; identification information inputting means for inputting the identification items of person to be pictured such as his or her name, address and status; and printing information storing means for storing respective informations input through said information inputting means as described above; printing means for printing on the basis of printing informations output from said printing information storing means; and central processing unit means for controlling the respective outputs from said respective inputting means, said printing information storing means and said printing means,

thereby to print-out an image of high gradation through said printing means from digital image informations of face image picture of the person and the like obtained through said image inputting means, and to simultaneously print said fixed informations and said identification informations through said printing means on a determined place of said recording medium in a few seconds.

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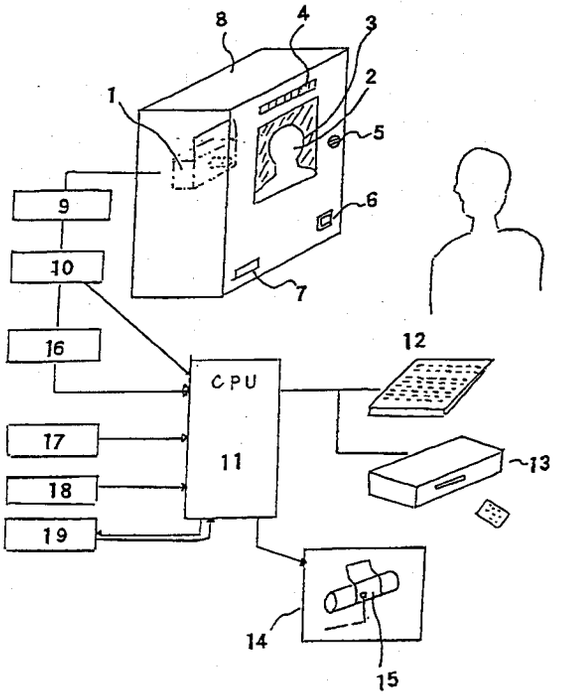
Fig. 1



FIELD OF THE INVENTION

The present invention relates to an Identification Card (called hereinbelow "ID card") with a face image picture for identifying a person having said ID card by means of said face image picture carried by said ID card when he or she enters into, stays in and gets out of places such as working shops, exhibitions or learning courses which need management and identification of unspecified large number of participants or visitors.

BACKGROUND OF THE INVENTION

Identification Cards (ID cards) with respective face image pictures of the carriers of said ID cards for identifying said carrier are generally known and usually used. However, it was impossible to issue them immediately (in several seconds) for a predetermined person, or to immediately issue the for undetermined large number of visitors due to the cost of card materials such as recording medium and printing apparatus for issuing ID cards.

More particularly, at the places such as exhibitions, game centers and skiing grounds, where a number of visitors are gathered in a short time period and several lines of visitors are formed at ticket issuing windows, it would be necessary, but unpractical, to provide there a number of issuing apparatuses of ID cards.

SUMMARY OF THE INVENTION

For eliminating the above disadvantages, the present invention has as its object to deliver a method and an apparatus for manufacturing of ID cards having each face image picture of carrier of said ID cards for identifying said carrier, which method makes it possible to issue these ID cards in a very short time period such as several seconds and at very low cost for unspecified large number of visitors.

The above object is achieved according to the invention by a method for manufacturing of ID cards with face image picture, using image inputting means for converting the face image of a person to be pictured into digital image signals and inputting said image signals in picturing section; image processing means for converting said image signals input in said image inputting means into image informations having gradation which can be output on recording medium; fixed image information inputting means for inputting particular informations recorded beforehand on printings and the like as fixed digital informations; date inputting means for inputting necessary items of digital informations such as date; identification information inputting means for inputting the identification items of person to be pictured such as his or her name, address and status; and printing information storing means for storing respective informations input through said information inputting means as described above; printing means for printing on the basis of printing informations output from said printing information storing means; and central processing unit means for controlling the respective outputs from said respective inputting means, said printing information storing means and said printing means, thereby to print-out an image of high gradation through said printing means from digital image informations of face image picture of the person and the like obtained through said image inputting means, and to simultaneously print said fixed informations and said identification informations through said printing means on a determined place of said recording medium in a few seconds.

Moreover, the above object is achieved according to the invention by an apparatus for manufacturing of ID cards with face image picture, using image inputting means for converting the face image of a person to be pictured into digital image signals and inputting said image signals in picturing section image processing means for converting said image signals input in said image inputting means into image informations having gradation which can be output on recording medium fixed image information inputting means for inputting particular informations recorded beforehand on printings and the like as fixed digital informations date inputting means for inputting necessary items of digital informations such as date identification information inputting means for inputting the identification items of person to be pictured such as his or her name, address and status printing information storing means for storing respective informations input through said information inputting means as described above printing means for printing on the basis of printing informations output from said printing information storing means and central processing unit means for controlling the respective outputs from said respective inputting means, said printing information storing means and said printing means thereby to print-out an image of high gradation through said printing means from digital image informations of face image picture of the person and the like obtained through said image inputting means, and to simultaneously print said fixed informations and said identification informations through said printing means on a determined place of said recording medium ink a few seconds.

As described above, the invention delivers a method of high identifying degree which utilizes the excellent human pattern identification capability for person identification by use of the face image picture and which can be carried out momentarily

without any particular apparatus.

According to the invention, after picturing the face image picture informations necessary for identification on the recording medium, respective informations obtained through said various information inputting means are controlled by said central processing unit thereby to determine the printing layout and the like, and a printer as printing means can print out in a few seconds on the basis of the printing informations. Therefore, it is possible to print out ID cards while at the same time to memorize the informations in memories, without a long waiting time of a number of attendants. In particular, cheap recording medium can be used due to the improvement of recording medium used in the printers, thereby to considerably reduce the ID card issuing cost. As the result, it is now possible to issue respective ID cards for a number of attendants.

As described above, said method and apparatus for manufacturing ID cards with each face image picture can readily print out ID cards in a short time period (in several seconds) owing to its simple image processing and rapid operation of printers. Accordingly, the method according to the invention is very suitable for arranging a number of attendants without their waiting lines.

BRIEF DESCRIPTION OF THE DRAWINGS

Figure 1 is a block diagram showing the apparatus for manufacturing ID card with face image picture.

Figure 2 is a top plan view of an ID card with face image picture according to the invention.

DETAILED DESCRIPTION OF THE INVENTION

An embodiment of the apparatus used for the method for manufacturing ID cards is described hereinbelow referring to the attached drawings, Fig.1 and Fig.2.

In Figure 1, a video camera 1 for picturing the face of person to be pictured has a semi-transparent mirror 2 located on its front surface. A profile guide member 3 for guiding and indicating the position of the profile of face portion of the person to be pictured is displayed on said semi-transparent mirror 2. The face of said person can be readily registered by making obscure the portion surrounding said profile guide member 3. The picturing apparatus 8 shown in Fig.1 has further an alarming lamp 4 adjacent to said video camera 1 for displaying the picturing timing, a coin slit 5, a control push button 6 and a discharging port 7. Said picturing apparatus 8 has further parts not shown in Fig.1 such as lighting lamp, vocal guiding indicator, operation guiding indicator and the like.

Said picturing apparatus 8 can be an automatic print- ing apparatus having a slit for ordinary ID cards such as name cards, driver's licenses and the like.

Said picturing apparatus 8 has therein an image storing device 9 and a digital image conversion device 10 for image processing in order to convert the output image signals from said image storing device 9 into printing image of high gradation. The resulting image processing signals are input into a central processing unit (CPU) 11. On the other hand, necessary items of digital informations such as issuing date is input from a digital information operating device 18 to said CPU 11, while particular digital fixed image informations necessary for said recording medium are input from fixed image information storing devices 17 to said central processing unit 11. Other fixed informations such as identification informations for identifying other identification items of the person can be also input by letter input of the name of that person by means of a keyboard 12 having a letter font generator. It is further possible to input any letter informations from name cards for example into said central processing unit 11 by means of a letter reading-out scanner 13. This picturing apparatus 8 includes therein a digital image storing device 16 for taking out therefrom the image of digital signals processed by said digital image conversion device 10. The printing informations produced by said CPU 11 are stored in an output images-information storing device 19.

A printer 14 prints out on a recording medium 15 on the basis of printing informations output from said CPU 11. Said printer 14 prints out by its thermal head on said recording medium 15 covered directly with usual thermal recording material. As shown in Fig. 2, this printed recording medium 15 has thereon informations such as effective date, face image picture and name/family of carrier.

The procedures for manufacturing ID card with face image picture according to the invention are now described hereinafter.

A person to be pictured enters first into a box where said picturing apparatus 8 is installed, and then the person puts a coin through said coin slit 5 as guided by the display on the front surface of said picturing apparatus 8. The person adjusts the situation of his or her face in said semi-transparent mirror 2 while locating his face image within said profile guide member 3 in the mirror 2 and operates said control bush button 6. The person can determine the shuttering moment due to the flashing of said alarming lamp 4 for shuttering moment. More particularly, shifting and flashing of LED flashing device positioned near said video camera 1 together with an alarming noise instruct the shuttering moment to the person. The face image pic-

ture thus obtained is stored in said image storing device 9 to be image-processed for gradations in the following step of said digital image conversion device 10.

These image signals thus image processed are input into CPU 11. On the other hand, the identifying informations of said person read out by the key board 12 or by said letter reading out scanner 13 are input into CPU 11. These letter informations are stored and laid out in respective determined regions on said recording medium by CPU 11.

On the other hand, fixed informations such as name of company issuing said ID card, name of event sponsor and name of event are output from said fixed information storing device 17 into CPU 11. These fixed informations, said identifying informations and digital informations which are beforehand adjusted, such as issuing date, time and effective period, as well as said image informations, are stored in ROM of said CPU 11, and are output from said CPU 11 into said printer 14 which discharges a recording medium 15 carrying all said informations through said discharging port 7. This picturing apparatus 8 can discharge a recording medium 15 thus printed in several seconds starting from the operation of said push button 6.

Since the resolution power of said printer 14 need not have such clear image as in the usual photograph, it is sufficient to have 200 DPI (dot numbers/inch). Accordingly, the printer 14 can print out in less time period than that of prior art photosensitive material using silver halides. Identification of the person is carried out momentarily, and the ID card is scrapped after its momentary use within its effective period, so that the lower resolution power as described above is sufficient.

Paper as carrying body of printed recording medium can be any converted paper or otherwise polyester sheet and the like. Generally, thin sheets having the thickness of 120 - 150 micron are suitable due to its high transportability and its high recording capacity as direct thermal material. Particularly , a thickness of about 140 micron gives a clearer image. A laminate membrane can be applied on the surface of said ID card for preventing any falsifying.

It is also possible to apply magnetic material on the rear side of said ID card and to input therein any informations. In this case, ID card can be produced by first reading out the magnetic informations contained in said magnetic material, by outputting identifying informations such as face image picture from said output image information storing device 19 for printing these informations on the surface of ID card. Said magnetic material on the rear side can be used later for personal management and the like.

Further, said ID card can be used as membership card in large-scale retail shops for identifying use. The face image picture recorded thereon is immediately converted into digital image to be stored again in CPU and laid out on the determined regions of output image plane. This process can be effectively used for compiling of membership list.

Informations such as issuing date and effective period are supplied from CPU for laying out on the determined regions of output image plane.

Output image informations comprising digital face image picture as well as fixed informations such as letter pattern image obtained from name card and issuing date are located in respective regions, and are transferred to said printer 14 to be printed on said recording medium 15. When this recording medium has reached a predetermined length, a cutter operates to cut said medium to separate respective ID cards which are then discharged through said discharging port 7.

In addition to immediately and momentarily printing out on said recording medium 15, the apparatus for manufacturing ID card can be later used for filing the face image pictures, names and the like of visitors.

Since the ID card according to the invention can be issued in very short time period, it can be utilized in any places. In a museum for example, the visitors who could not see all the exhibited articles can be suitably managed. Warrant tickets at cloakroom in hotels or at parking lots can be issued without loss time or fees on the side of visitors.

ID card according to the invention can be also used as visitors card issued in the entrance of company, factory and the like or as security card used in apartment.

While the present invention has been described with reference to exemplary embodiments thereof, it will be appreciated by those skilled in the art that variations and modifications may be made thereto if necessary without departing from the spirit of the inventive concepts disclosed herein.

Claims

1. A method for manufacturing of ID cards with face image picture, said method using,

image inputting means for converting the face image of a person to be pictured into digital image signals and inputting said image signals in picturing section;

image processing means for converting said image signals input in said image inputting means into image informations having gradation which can be output on recording medium;

fixed image information inputting means

for inputting particular informations recorded beforehand on printings and the like as fixed digital informations;

date inputting means for inputting necessary items of digital informations such as date;

identification information inputting means for inputting the identification items of person to be pictured such as his or her name, address and status;

printing information storing means for storing respective informations input through said information inputting means as described above;

printing means for printing on the basis of printing informations output from said printing information storing means; and

central processing unit means for controlling the respective outputs from said respective inputting means, said printing information storing means and said printing means,

thereby to print-out an image of high gradation through said printing means from digital image informations of face image picture of the person and the like obtained through said image inputting means, and to simultaneously print said fixed informations and said identification informations through said printing means on a determined place of said recording medium in a few seconds.

2. Apparatus for manufacturing of ID cards with face image picture, using image inputting means for converting the face image of a person to be pictured into digital image signals and inputting said image signals in picturing section;

image processing means for converting said image signals input in said image inputting means into image informations having gradation which can be output on recording medium;

fixed image information inputting means for inputting particular informations recorded beforehand on printings and the like as fixed digital informations;

date inputting means for inputting necessary items of digital informations such as date;

identification information inputting means for inputting the identification items of person to be pictured such as his or her name, address and status;

printing information storing means for storing respective informations input through said information inputting means as described above;

printing means for printing on the basis of printing informations output from said printing information storing means; and

central processing unit means for controlling the respective outputs from said respective inputting means, said printing information storing means and said printing means,

thereby to print-out an image of high gradation through said printing means from digital image informations of face image picture of the person and the like obtained through said image inputting means, and to simultaneously print said fixed informations and said identification informations through said printing means on a determined place of said recording medium in a few seconds.

3. Apparatus for manufacturing ID card with face image picture which is characterized by a fixed information inputting means which reads out said identification information from identifying printings such as name card by means of reading scanner for supplying said information into said fixed informations.

Fig. 1

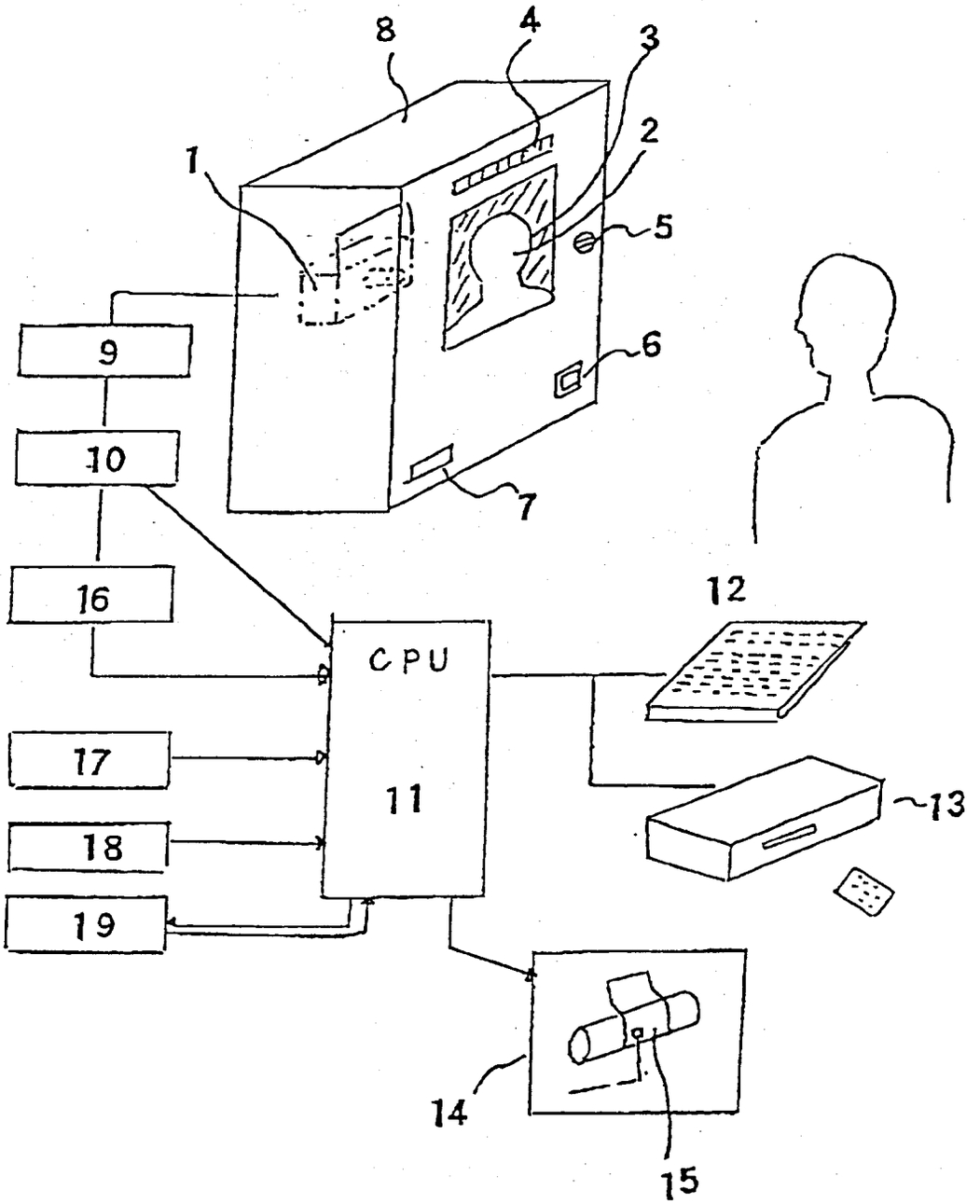
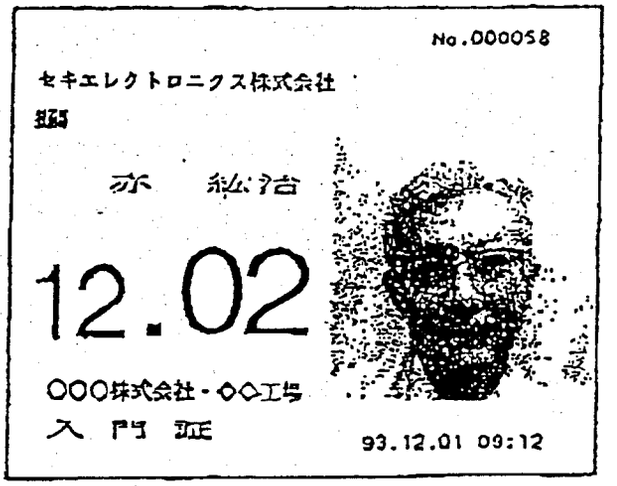


Fig. 2



European Patent Office

EUROPEAN SEARCH REPORT

Application Number
EP 94 30 9661

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	EP-A-0 195 104 (SKI-DATA COMPUTERGESELLSCHAFT) * the whole document * ---	1-3	B42D15/10
X	EP-A-0 412 520 (TOSHIBA) * the whole document * ---	1-3	
X	WO-A-93 16447 (SKI-DATA COMPUTERGESELLSCHAFT) * the whole document * -----	1-3	

TECHNICAL FIELDS SEARCHED (Int.Cl.6)

B42D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	25 April 1995	Evans, A

CATEGORY OF CITED DOCUMENTS

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