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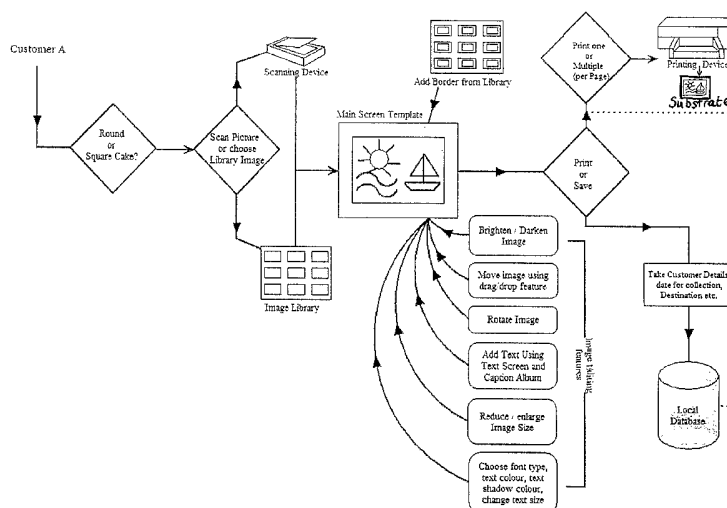
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(54) Title: A SYSTEM AND PROCESS FOR PERSONALISING IMAGES FOR CAKES



(57) Abstract: A system and process for personalising printable images for bakery products, using: a user controlled screen, a shape selection interface area, an interface area for placing a chosen image in an image-editing interface area, allowing individual editing of the image on the user-controlled screen, an interface area for adding customer details, a database storing a) the edited images to be printed, b) the customer details, and c) customer orders, and an administration interface area for accessing the database and for printing the edited images. The system may include a database at a central location. It is primarily intended for use in retail bakery outlets in supermarkets or bakery stores. The system may have network capability to allow the sharing of cake orders to remote outlets, in the same or another state or country.

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A System and Process for Personalising Images for Cakes

Background of the Invention

1. Field of the Invention

5 This invention relates to a system and process for personalising images for cakes in the bakery industry. It will be understood that the word "cakes" is not used in a limiting sense but covers any products of the bakery industry to which decorative images are applied.

10 2. Description of Prior Art

Decoration of cakes and similar food items to add value has become a common practice. Samples are presented on the cake to both increase visual appeal and to customise the cake for specialist requirements. For example, cartoon characters are often presented on cakes for special events.

15

US Patent No. 4,910,661 (Barth) describes an integrated computer system for capturing live video images and combining these with text and with artwork which can either be composed contemporaneously on site or selected from previously prepared artwork selections. The video image, artwork and text can be edited and combined as
20 desired for display on a monitor to provide a preview of the decorative pattern. The displayed pattern is then reproduced on the cake by an X-Y table which moves liquid spray applicators and icing or gel dispensers over the cake and controls the application of food colouring and icing or gel in a manner to reproduce the selected pattern on the cake. This apparatus and method represented a significant improvement over previous
25 techniques but the production costs of the proposed solution limited its suitability to large scale manufacturing facilities. Retail outlets that would prefer to offer specialist cake decoration services to their clients are prevented from doing so by the production costs involved. Furthermore, the surface of the cake must be substantially flat so as to avoid fouling the applicators. In addition, although a computer system is used, and an
30 image and/or artwork can be recorded on a hard disk or other storage medium, no provision is made for relating images to the customers for whom the images have been composed.

A further alternative solution is shown in International Patent Publication No. WO 97/27759 equivalent to US Patent No. 6,058,843 (Young) describes a machine to print an image onto a surface of an edible substrate, the machine including a bubble-jet assembly. This solution overcomes the scale problems associated with US Patent No. 4,910,661 (Barth et al.) however the edible inks involved are prone to drying out within the print head, which requires additional print heads to be supplied. The Young machine includes a computer system to store and manipulate the image. Control means are provided to control the use of copyright images within the system. Further detail is set out in US Patent No. 6,536,345 (Young) which was published after the priority date of the present application. As described therein, an image to be printed on an edible substrate is stored on electronically accessible (e.g. a compact disc or magnetic storage device) media held within a computer processor and is accessed by entering the required image code via touch screen, a keyboard, a key pad or pointing device. The software can scan an image into a format usable to drive and control the print head assembly. The software also allows the user to crop the image, adjust its brightness and contrast, or alter its hue, or (except in the case of a copyright image) generally change it to what is desired. However in the above-mentioned Young patents an image is stored only for a short time until it is sent to the print head assembly. There is no suggestion of relating an image to the customer for whom it has been ordered or a future date on which it is to be printed.

US Patent No. 6,030,134 (Stewart) discloses that in an attempt to reduce the complexities involved with printing directly onto icing, edible paper was developed onto which a scanned or stored image may be printed, such as with a conventional ink jet printer supplied with edible inks. The paper, being the printed image thereon, may then be placed directly onto the icing, thereby decorating the iced cake. The '134 Patent describes a method of modifying a printer to handle edible paper.

US Patent No. 6,319,501 (Stewart) describes a method of photocopying an image onto an edible web for decorating iced baked goods. The edible web is mounted on a carrier, an image is placed on a copy glass of a photocopy machine, the carrier and edible web is passed through the photocopy machine and the image is reproduced onto

the edible web using edible ink. The edible web with the image thereon is then placed onto the iced baked good. It is said that the decorated substrate may contain virtually any image desired by the consumer including a depiction of a birthday child.

5 US Patent No. 6, 582, 742 (Stewart) describes a similar method utilizing an edible web on a carrier with the web extending short of at least one edge of the carrier to define an exposed strip of the carrier.

None of the three above-mentioned patents of Stewart describes a system for
10 individual editing or storing of the images, or suggests a system for relating an image to a customer who desires to have it applied to a cake.

International Patent Publication No. WO 01/52661 (Coyle), the contents of which and of the US equivalent of which are expressly incorporated herein by reference,
15 describes apparatus for producing a printed edible product and edible inks for that purpose. In one arrangement there is provided an integrated printer and scanning device for printing an image on an edible substrate. No system for preparing the images for scanning or printing is described.

20 SUMMARY OF THE INVENTION

It is an object of the invention to provide a computer-implemented system and process for personalising images to be applied to cakes and for administering the ordering of such images. The invention is for use in the bakery industry, particularly in customer-accessible locations where customers may get the feel of making their own
25 cakes.

The present invention provides a bakery industry system for personalising printable images for cakes, comprising:

a screen,
30 a cake-shape selection area,
an area for placing a chosen image in an image-editing area, allowing individual editing of the image on the screen,

an area for adding customer details,
a database storing
a) the images to be printed,
b) the customer details, and
5 c) optionally, customer orders,
and an administration area for seeing the database and for printing the images.

It will be understood that the system is computer-implemented and that the screen is a user-controlled screen. It will be understood also that the “areas” referred to
10 are areas displayed on the screen. The areas may also be described as interface areas. It will be understood that “seeing” the database is accessing it.

It will be appreciated that the word “database” when used herein with reference to the present invention is used to indicate any collection or arrangement of accessible
15 data or information arranged for example for search and retrieval, including but not limited to a data bank, library or set of records, spreadsheet, data system, or information pool.

Suitably, the database stores the date for which an image has been ordered. Most
20 suitably, the administration area allows for printing of images stored in the database. Suitably also, the database also stores images that have been printed.

According to one aspect, the stored customer details include details that can be used for possible delivery. This facilitates delivery of the decorated cake to a location
25 other than the premises where the order has been made, including delivery overseas.

Suitably, the system provides for resizing the image, or a selected area of an image, to fit the work area. It will be understood that the work area corresponds to the selected cake-shape. In a preferred embodiment, the system provides for automatically
30 centering and resizing of an image, or a selected area of an image, to fit the work area.

The system may include one or more scanners for scanning an image to be placed in the image-editing area. The system may also comprise an image library from which a pre-made image may be selected to be placed in the image-editing area. Furthermore the system may also comprise a border library from which a border for an image may be chosen to be placed in the image-editing area. Suitably the image-editing area further comprises a text creating area for adding captions. The system may also provide a cake preview area.

Suitably the screen is a touch-screen. Most suitably, it provides a touch-screen keyboard. Preferably a code is needed for entry into the administration area.

Suitably, the system includes a centrally located database.

In one embodiment the image-editing area is run in a wizard-like fashion. Most suitably the image-editing area comprises buttons for one or more of the following:

- to brighten or darken image,
- to re-chose a shape of cake,
- to increase or decrease image size,
- to rotate image, and
- to move image.

Preferably the cake-shape selection area allows selection between a round or a rectangular cake. Suitably the administration area comprises a printer setting option. Most suitably the printer setting option sets the image quality. One such printer setting option is to select the number of images per page to be printed. Where the image is to be applied to a standard or full sized cake, one image per page will be desired. In a situation wherein an image is required for application to a cake of less than standard size, such as for example an individual cake typically known as a fairy cake, a plurality of identical images may be printed on a single sheet of edible paper. A number of small image may be "tiled" within the printable area.

Suitably the administration area comprises a scanner setting option. Most suitably the scanner setting option comprises choosing a scanner from a multiplicity of scanners.

- 5 In one aspect the invention provides a bakery industry process for personalizing images for cakes by use of a screen comprising:
- selecting a cake-shape for which the image is intended,
 - placing an image in an image-editing area on the screen,
 - optionally, individually editing the image,
 - 10 adding customer details,
 - storing the image in a database together with the customer details, and
 - printing the image.

- 15 Suitably the process includes scanning an image. According to one feature, the process includes choosing a pre-made image from an image library.

- 20 Most suitably the process includes scanning an image with a low resolution, selecting an area of the image to be used for the cake and rescanning the selected area to give a high resolution image.

- 25 Preferably the process includes resizing the image, or a selected area of an image, to fit the work area. Most preferably, the process includes automatically centering and resizing the image, or a selected area of an image, to fit the work area.

- 30 Preferably the method includes printing the image from the database. Suitably the image is printed with edible inks on an edible substrate to be applied to a cake. The method allows multiple instances of the same image to be printed on one page, enabling smaller images to be created for cookies, party cakes or fairy cakes.

- 35 There is also provided a computer program comprising program instructions for causing a computer program to carry out the above process which may be embodied on a record medium, carrier signal or read-only memory.

While the present invention is described with reference to cakes, it can be used for other bakery products suitable for carrying decorative images.

BRIEF DESCRIPTION OF THE DRAWINGS

5 Figure 1 is a block diagram illustrating the system and process of the invention as initially described in the Detailed Description below.

 Figure 2 is an alternative diagram illustrating the system and process of the invention.

 Figure 3 is a diagram illustrating the system using the Internet.

10 Figure 4 is a diagram showing the Administration area.

 Figure 5 is a view of a user-controlled screen forming part of the system.

 Figures 6 and 7 are illustrations of interface areas on the screen during use of the system.

 Figure 8 shows an example of an edited image.

15 Figure 9 shows the image of Figure 8 presented as a plurality of identical images for printing on a single sheet.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

 This application has been designed for the bakery industry, specifically the cake-
20 making industry. It is designed to allow individual editing of images to personalise printing high quality images on cakes. It will be understood by those familiar with the art that the images are usually printed onto an edible substrate which, after removal of a backing sheet if necessary, is to be applied to a cake, for example as in WO 01/52661 of Paul Coyle who is one of the inventors herein. Therefore the printing on cakes is
25 indirect. The types of edible substrate that can be used are well known to those skilled in the art and include sugar-based icing, cornstarch paper or other substrates described in the prior art references mentioned above.

 The software application is operated by a user-controlled screen. A database
30 resides behind the application enabling the potential to store customer orders and details at a central location.

The main areas and processes are described below in the form of instructions in which the word “you” refers to the user and the word “we” refers to the system.

To begin with there is a picture on the screen and by clicking on this graphic you
5 can go to Area 1 (below). Hidden on the picture is a part that can also bring you to an admin section, as will now be briefly explained.

Administration (admin) - This area allows you to see the database from which you can print off the images for the day.
10

When you try to enter the admin section a keypad shows up, and you need to enter the correct code to gain entry.

You can go to a date of your choice. Any images not printed already are
15 indicated with a green circle, any already done have a red ball.

When you decide to print an image, a preview screen is brought up. Here you can change the printer settings. You also have three options for the image quality. (Some images look better with certain settings). Then you can simply print off the
20 image, and you are brought back to the main admin area, and the image entry will have the red ball (i.e. printed).

In the admin area you can also change setting for the scanner and database if necessary (i.e. where the database is stored, and if there are multiple scanners you can
25 choose the right one). You can also change the admin code if necessary.

Area 1 – Adding Customer Details

Here we take in the customer details for the database that can be used for possible delivery.

30 Mainly we have a touch screen keyboard with all necessary letters and numbers, and also a symbol button which gives extended characters.

You simply continue from here to Area 2.

Area 2 - You can choose either a round or rectangular cake.

Area 3 - This area is where most of the image editing is done, and it moves through a series of stages to split up and simplify different processes for the editing in a wizard like fashion. It is designed to resemble a bakery to give the feel of making your own cake from scratch.

Area 4 – Scan/Crop area.

- You can scan an image into the application, first with a very low resolution for high speed.
- You can crop the image by drag selecting the area you want to use for the cake.
- You can change the colours of the image to be full Colour or Greyscale.
- You can increase and decrease the area you selected using + or – buttons.
- You can cancel all changes by rescanning the image very quickly.
- When you have decided on the areas and other options and want to continue, the application rescans the area with all the chosen settings, to give a high-resolution image, and places this image in the image editing section (Area) of the application. The image automatically centres and resizes to fit the work area.

Area 5 - Image Library

If you want to use a pre-made image, you can enter the image library and simply select the image you want to use. The library has different selections of images i.e. Christmas, birthday etc, to give a full range of images for every occasion. Again the image automatically centres and resizes to fit the work area.

Area 6 – Border Library

You can now add a border to your image by clicking the border button. Again there is a library of borders to choose from for every occasion. When you select a border, it is placed on top of the main image. It has the same layout as the image library to minimize confusion.

If you do not want the border when you see it on the image, you can remove it simply by hitting a “no border” button.

Once you have gotten past Area 5, we now go back into Area 2 to continue the image editing. The following are the processes involved in this Area;

1. Before continuing from the image choosing section (from where you can scan or choose your image) you can:

- Brighten or darken your image by using two simple buttons, with a third button there for cancelling any changes you made.
- 5 - Go back to choosing the shape of the cake. This will erase any work you may have done so far.
- Or you can continue.

2. By hitting the “continue” button (a green arrow) the previous options are
10 replaced with the next set, including;

- Increase and decrease image size. So the image you are using can be blown up as big or small as you want.
- Rotate the image to any degree, using clockwise and anti-clockwise buttons.
- 15 - Move the image to any part of the work area with a set of arrows.
- Again you can go back to the previous set of options, but this will erase any work you have done after you continued from the first set of options.
- Or you can continue.

3. By continuing again, we arrive at the Text Area, on arriving you have
20 two options;

- You can hit a “Text” button, which takes you to Area 7 (see below).
- You can hit the ”Preview” button which takes you to Area 8 (see below).

Area 7 – Text creating area

This is an area with a touch screen keyboard allowing the user to add whatever
25 caption they want to the cake very easily.

Along with all the numbers and letters of a normal keyboard, there is also a “Symbol” button, which allows the user to add all the extended characters.

There is also a Caption Library with pre-made captions for all occasions.

Here you can make the text bold, italic or underlined, or all three.

30 You can clear any text if you simply do not want to bother with it.

If you have added text, when you continue, you return to the main area (Area 3), but with a few more options for changing the new text around (see below).

Area 3 (Continued) If you have added text you will now have the following additional options.

- You can change the font of the Text. When you hit the button a screen appears with lots of different font types.
- 5 - You can change the colour of the Text. When you hit this button a palette of 20 or so colours appears at the bottom of the screen, and simply pressing the colour you want changes the text colour.
- You can increase or decrease the size of the Text using + or – buttons.
- You can rotate the text to any angle using clockwise and anti-clockwise
10 buttons.
- You can add shadow to the Text. When you hit this button the colour palette appears again, and you can choose the colour of the Text shadow.
- You can move the Text around the work area with the same arrows as used when moving the image around.
- 15 - Obviously you still have the option of the preview, and once you have finished editing the Text, since this is the last process to go through, you can now hit the “Preview” button to bring you to Area 8 (see below).

Area 8 – Cake Preview

Here you can see your cake as big as is possible, along with all the details you
20 entered in previous Areas.

From here you can return to either editing your details which takes you back to Area 1 but when you finish this time you are taken straight back to Area 8.

You can hit the “Cancel” button, which takes you back to the previous editing process to make more changes.

25 Or you can continue, which will finish the cake-making process for now. The edited image is stored in the database together with the customer details and the customer order including the date on which the image is to be printed off for a cake.

The above-described system and process is illustrated diagrammatically in
30 Figure 1. The system is primarily intended for use in retail bakery outlets, for example bakery counters in supermarkets or bakery stores. It facilitates pre-ordering of images by customers and enables a bakery staff member to preview and/or print off the images

that are to be applied to cakes on a chosen day. For a supermarket chain, having the database residing at a central location facilitates control of the cake business throughout the chain and provides customer details which can be used in analysis or for communication and marketing. In the above description, the term “you” referring to the user may refer to a customer or to a staff member operating the system. In the Administration interface area, which requires a code for entry, the user must be a staff member.

As shown in Figure 2, customer A first chooses a round or rectangular (e.g. square) cake. The customer then elects whether to scan a picture using a scanning device or to choose a Library Image from the Image Library which contains images for various occasions or celebrations such as birthdays, funerals, religious festivals etc., and which may also contain licensed images depending on the vendor. The chosen image is placed on the main screen template, where a border may optionally be added from the Border Library, which is similarly divided into various occasions. The image, whether chosen from the Image Library or scanned in on the scanning device, automatically sizes to the full cake/main screen template, regardless of whether a round or rectangular cake is chosen. In Figure 2, the chosen image is a seaside scene with the sun, waves, a boat and optionally with words such as “Happy Holidays”.

20

Various design tools can be used to personalise the Cake Design and these may be used in any order. As shown in the figure, these image editing features include:

brighten/darken image; move image using drag/drop feature; rotate image; add text using Text screen and Caption Album; reduce/enlarge image size; choose font type, text colour, text shadow colour, change text size.

25

Once the image has been completed, the design is either directly printed, or the image along with customer details, date for collection, destination etc. is stored in the local database for subsequent printing. Customer details normally include the name, address and telephone number of the customer. If the image is to be printed at a remote location, the details may include the name and address of the person to whom the cake is destined and/or to whom it is to be delivered. The database may also contain a unique

30

identifier for the order, relating to the image itself, and/or the store or retail chain where it has been ordered and/or where it is to be delivered. Even if the image has been directly printed it may also be stored as a temporary image in the local database in case there is a problem with the print. Prior to printing the customer or user will be asked to
5 select the number of images required per page.

The image and customer details may then progress from the local database to another party or database either through the Internet or otherwise.

10 A networked system according to the invention is illustrated diagrammatically in Figure 3. As shown in Figure 3, a cake design unit (console) is located in Store A with a database serving as a local image and customer detail store. Customer A can use this cake design unit. The unit is connected by Retailer A's network environment to Retailer A's central database which, in turn, is connected over the Internet to the Master
15 Database. Likewise, a cake design unit (console) is located in Store B with a database serving as a local image and customer detail store. Customer B can use this cake design unit. The unit is connected by Retailer B's network environment to Retailer B's central database which, in turn, is connected over the Internet to the Master Database.

20 The Master Database in the Supplier Network Environment can be contacted over the Internet by Internet Users C and D.

Using the system in Figure 3, the following processes can take place

25 **Scenario 1**

Customer A creates a cake design on the Cake Design Unit of the invention in Store A in order to have the image printed by the Cake Design Unit in Retailer B's Store B. This image along with customer details and the identification (ID) of the cake design
30 unit are stored in the local database of the Cake Design Unit. The image and details are then passed to the Retailer A Central Database. This information is then passed to the Master Database in the supplier network via the Internet or other communication means.

The details are then processed by the Master Database and passed to Retailer B's Central Database.

This information is subsequently passed to the Local Database in the Cake Design unit in Retailer B's store and the image is ready for printing at this location.

5

Scenario 2

Customer C who is an Internet User creates a cake design on his home computer. He then sends this image to the Supplier's Master Database via the Internet or other
10 communication means. This information is then passed to the Retailer B's Central Database, and subsequently to the Local Database of the Cake Design Unit in Store B where it is to be printed. Store B may be in a different location, nationally or internationally. As a result of the system being connected through a global communications network such as the Internet, stores are able to send and receive images
15 from foreign stores.

Scenario 3

Customer A creates a cake design on the Cake Design Unit in Store A. This image, the
20 customer details and unique unit ID are then passed to the Central Database of Retailer A. Should the destination for the image be within the same Retailer Network, the information can then be directed to the Local Database of another Cake Design Unit within the same network without having to pass the information to the Master Database in the Supplier Network.

25

The image may be taken into the system by any suitable image-receiving device. For example a digital camera, webcam or mobile phone may be used in a bakery outlet or at a remote location, in which latter case the image may be sent to a database, suitably the Master database, via the Internet, by email, or any other suitable communication
30 method. Customers can create their images at home and email the image to the Master Database or to an Internet-connected store .

The console can be used for advertising e.g. to advertise a store itself or supplier or in-store products. When not in use, the screen can carry advertisements for other products or store specials, either as a “screen-saver” or by flashes on the screen.

- 5 Customer information stored in a central database can be used for marketing campaigns or to remind customers after a certain period (e.g. slightly less than one year) that they that they ordered a cake previously (e.g. at the same time the year before). Customer orders can also include other items suitable to the celebration or other event, e.g. candles, figurines etc. and these can be recorded in the database.

10

Figure 4 shows the operations which can be carried out in the Administration Area and is self-explanatory. The following summary refers to the user as “you”:

Main Use:

- 15 1. Queries database for all images to be printed (Collection Date) today.
 2. You can move to whichever date you choose.
 3. You can view all images stored.
 4. Printed Images are highlighted in red, unprinted in green
 5. With each entry you can
- 20 a. Print the image
 b. View the entry details e.g. name, phone.....
 c. Delete the entry

Secondary Use:

- 25 1. Database stores Temporary (Temp) images as backups in case of problem with prints.
 2. Temp Images can be viewed for printing (Images are stored for 1 day only, and are then automatically deleted from the database)

30 Tertiary Use:

1. A number of Administrative tools are available
 a. Clear all print Jobs to printer
 b. If there is a problem with the database, you can restore a saved database

- c. Change Administrator password
- d. Enable/disable the round cake feature
- e. Choose a different Twain Device for scanning
- f. The Update option corresponding to a CD can be executed here
- 5 g. All Temporary Images can be cleared from the database

Figure 5 shows one example of a console 1 to be located on a bakery counter or the like. The unit may of course have a base which allows it to stand on a floor. The console has a touch screen 2 displaying an interface which is the same as that of Figure 10 6. This shows a touch-screen interface on which a customer may choose whether to scan a picture or to choose an image from a library. Figure 7 shows a touch-screen interface on which the customer may select the cake shape. Both of Figures 6 and 7 illustrate cakes with decorative images applied to them, the images being of the kind which can be personalised by use of the invention.

15

Figure 8 shows one example of an edited image comprising a cartoon figure from the Image Library at the centre, a caption "Happy Birthday John" above the figure and a border around the figure and caption.

20 Figure 9 shows the same edited image presented as four identical images for printing onto a single sheet of edible substrate for application to four small cakes.

Description of one embodiment called the CakeStation™

25 The CakeStation is a one-piece, touch-screen system, which has been developed for the purposes of creating personalised images for placement on cakes within bakery departments.

30 The CakeStation integrates with the Decocake system (see WO 01/52661), which is commercially-available from Decobake Limited, Unit 1, Clane Business Park, Co. Kildare, Ireland. This system scans and prints images onto edible paper using food colouring in place of ink system. The present invention improves the sales potential of

the known system by allowing the general public to create their own masterpieces and enhance the design of their own cake by adding choices of borders and text to the design. The CakeStation can easily integrate with other printing systems than the Decocake system if they exist within a bakery already.

5

The image can either be a photograph provided by the customer, or an image selected from the image library within the system itself. The library of images can be easily customised, and can include licensed images, or images created by a design department etc.

10

Using the software application of the invention, photographs are automatically resized to the size of the cake and the customer is provided with many choices for enhancing the final cake design using colour palettes, text creation and borders for around the photograph. The customer may choose between having the final cake design applied to a full-sized cake or to a number of small party cakes or "fairy cakes".

15

The CakeStation usually resides at the Bakery counter, for example in a supermarket or bakery store, and with minimum assistance from bakery staff for scanning and printing, the customer can enjoy creating their own cake design. This process can be customised depending on the requirements of the bakery department.

20

Other options in the CakeStation system include the ability to save the images for printing at a later stage, and simple tools for managing the system for use by bakery staff.

25

The CakeStation system is functionally flexible and has the potential to be used in other configurations. This includes the ability to send images created on the console to a central bakery for placement on a cake and next-day delivery to local stores if this is required. It can be networked into the existing Information Technology (IT) infrastructure, and images can also be sent via modem to a central location.

30

The CakeStation system has other technology for enhancing the manner in which cakes are purchased in the future. The system has an inbuilt network capability to allow the sharing of cake orders to various stores within supermarket chains, or even to other supermarkets around the world to enable a solution of remote ordering whereby, for
5 example, a customer in the US could order a cake from their local supermarket for delivery to a family member or friend via another outlet bakery anywhere in the world. Many different Supermarkets in different countries will be able to share images and deliver locally wherever the customer wishes, similar to the delivery system currently used for flowers.

10

The system is based on software loaded onto a manufactured console for the purposes of display in Supermarkets or Bakery outlets to be used by consumers to create their own cake designs.

15 For each individual client the software can be customised and further developed depending on requirements. For example, some stores do not have local bakeries and images created on the console need to be relayed to remote bakeries for placement on cakes and shipped to the store or customer.

20

In one embodiment, the console is based on a PC solution purchased from Dell Computer. All the other components – the screen and touch-screen mask, networking components and cabling etc. are customised by the supplier.

25 The software is developed using programming tools available to people skilled in the art.

For autoscanning a selected area of an image so as to exclude white surrounding areas, the following procedure can be used:

30

Scan the full image. Using this image:

1. Starting at the top left position move across the image, pixel by

pixel (0, 1), (0, 2) and check its value. If it has a value(colour) greater than white(or a given background colour, generally a little darker than white), the position is noted, and the search stops. If one reaches the other side with no value greater than white, move to position (1, 0) and repeat the process (1, 1), 1, 2). This gives the top of the image, and
5 from the point noted one draws a line, down from which is the new image.

2. Starting at the top left position (0, 0), one moves down the image pixel by pixel (1, 0), (2, 0), repeating the same process as part 1. This gives the left-most position of the new image.

10

3 Then start from the very right and work left, and from the very bottom and move up.

Once one has found all 4 points and drawn all 4 lines, one is left with
15 the selected area for the new image.

By simply telling the scanner these 4 points, it can scan in the necessary area, excluding the parts at the top, left, right and bottom where there was only white. The image is obviously still a rectangle.

20

The embodiments in the invention described with reference to the drawings comprise a computer apparatus and/or processes performed in a computer apparatus. However, the invention also extends to computer programs, particularly computer programs stored on or in a carrier adapted to bring the invention into practice. The
25 program may be in the form of source code, object code, or a code intermediate source and object code, such as in partially compiled form or in any other form suitable for use in the implementation of the method according to the invention. The carrier may comprise a storage medium such as ROM, e.g. CD ROM, or magnetic recording medium, e.g. a floppy disk or hard disk. The carrier may be an electrical or optical signal
30 which may be transmitted via an electrical or an optical cable or by radio or other means.

The invention is not limited to the embodiments hereinbefore described but may be varied in both construction and detail.

The words “comprises/comprising” and the words “having/including” when
5 used herein with reference to the present invention are used to specify the presence of
stated features, integers, steps or components but do not preclude the presence or
addition of one or more other features, integers, steps, components or groups thereof.

CLAIMS

1. A bakery industry system for personalising printable images for cakes, comprising:
 - a screen,
 - 5 a cake-shape selection area,
 - an area for placing a chosen image in an image-editing area, allowing individual editing of the image on the user screen,
 - an area for adding customer details,
 - a database storing
 - 10 a) the images to be printed,
 - b) the customer details, and
 - c) optionally, customer orders,
 - and an administration area for seeing the database and for printing the images.
- 15 2. The system of claim 1 which provides for resizing the image, or a selected area of an image, to fit the work area.
3. The system of claim 1 or 2 wherein the database stores the day on which an image is
20 to be printed.
4. The system of any preceding claim wherein the administration area allows printing images from the database.
- 25 5. The system of any preceding claim wherein the database also stores images that have been printed.
6. The system of any preceding claim wherein the stored customer details include details that can be used for possible delivery.
- 30 7. The system of any preceding claim which provides for automatic centering and resizing of the image, or a selected area of the image, to fit the work area.

8. The system of any preceding claim which comprises one or more scanners for scanning an image to be placed in the image-editing area.
9. The system of any preceding claim which comprises an image library from which a pre-made image may be selected to be placed in the image-editing area.
10. A system according to any preceding claim which comprises a border library from which a border for an image may be chosen to be placed in the image-editing area.
11. A system according to any preceding claim wherein the image-editing area further comprises a text creating area for adding captions.
12. A system according to any preceding claim further comprising a cake preview area.
13. A system according to any preceding claim wherein the screen is a touch-screen.
14. A system according to claim 13 comprising a touch-screen keyboard.
15. A system according to any preceding claim wherein a code is needed for entry into the administration area.
16. A system according to any preceding claim wherein the image-editing area is run in a wizard-like fashion.
17. A system according to any preceding claim wherein the image-editing area comprises buttons for one or more of:
 - to brighten or darken image,
 - to re-choose a shape of cake,
 - to increase or decrease image size,
 - to rotate image, and
 - to move image.

18. A system according to any preceding claim wherein the cake-shape selection area allows selection between a round or a rectangular cake.
19. A system according to any preceding claim wherein the administration area
5 comprises a printer setting option.
20. A system according to claim 19 wherein the printer setting option sets the image quality.
- 10 21. A system according to claim 8 or any of claims 11 to 20 wherein the administration area comprises a scanner setting option.
22. A system according to claim 20 wherein the scanner setting option comprises choosing a scanner from a multiplicity of scanners.
- 15 23. A bakery industry process for personalizing images for cakes by use of a screen comprising:
selecting a cake-shape for which the image is intended,
placing an image in an image-editing area on the screen,
20 optionally, individually editing the image,
adding customer details,
storing the image in a database together with the customer details, and
printing the image.
- 25 24. The process of claim 23 which includes resizing the image to fit the work area.
25. The bakery industry process of claim 23 which includes scanning an image.
26. The process of claim 25 which includes scanning an image with a low
30 resolution, selecting an area of the image to be used for the cake and rescanning the selected area to give a high resolution image.

27. The process of any of claims 23-26 wherein the image, or a selected area of an image, is automatically centred and resized to fit the work area.
28. The process of claim 23 which includes choosing a premade image from an image library.
29. A computer-implemented system for personalising an image for a bakery product by means of a user-controlled screen comprising:
means for selecting a product-shape for which the image is intended,
means for placing an image in an image-editing area,
software application means allowing for individual editing of the image,
database means for storing the image together with details of a customer for whom the image is intended, and
means for printing the personalised image.
30. A system according to claim 29 wherein the means for printing the image comprises printer means for printing onto an edible substrate which is to be applied to a bakery product.
31. A system according to claim 29 or 30 which includes software application means for automatically centering and resizing an image, or a selected area of an image, to fit the work area of a selected bakery product shape.
32. A system according to any of claims 29-31 wherein the database means is connected within a retailer network environment.
33. A system according to any of claims 29-32 wherein the database means is connected to a retailer central database.
34. A system according to any of claims 29-33 wherein the database means is connected over the Internet or other communication network to a master database.

35. A system according to claim 34 having means for a customer to input an image to the master database for use in the preparation of an image for a bakery product.

36. A system according to any of claims 29-35 having network capability to allow the sharing of bakery product orders to various outlets within a retail chain.

37. A system according to any of claims 29-36 having network capability to allow the sharing of bakery product orders to remote outlets in the same or another state or country.

38. A system according to any of claims 29-37 having means for printing multiple instances of the same image on one sheet of an edible substrate.

39. A system according to any of claims 29-38 wherein the database stores a unique identifier for each order.

40. A computer program comprising computer instructions for causing a computer to perform the process of any of claims 23-28.

41. A computer-implemented system for remote ordering of bakery products decorated with selected images, comprising:

means for selection of an image by a customer in one location,
first database means for storing the selected image together with details of the customer and of a customer order including a destination in a remote location for the selected image,
means for connecting the first database to a communications network,
second database means at the remote location for receiving the selected image and details of the customer order via the communications network,
and

printing means at the destination connected to the second database means for printing the selected image onto an edible substrate for application to a bakery product to fulfil the order.

42. An application designed for the bakery industry, specifically the cake-making industry, to allow individual editing of images to personalize printing images for cakes, comprising

a screen,

5

a cake-shape selection area,

an area for placing a chosen image in an image-editing area, allowing individual editing of the image on the screen,

an area for adding customer details,

a database storing

10

a) the images to be printed,

b) the customer details, and

c) customer orders,

and an administration area for seeing the database and for printing the images.

15

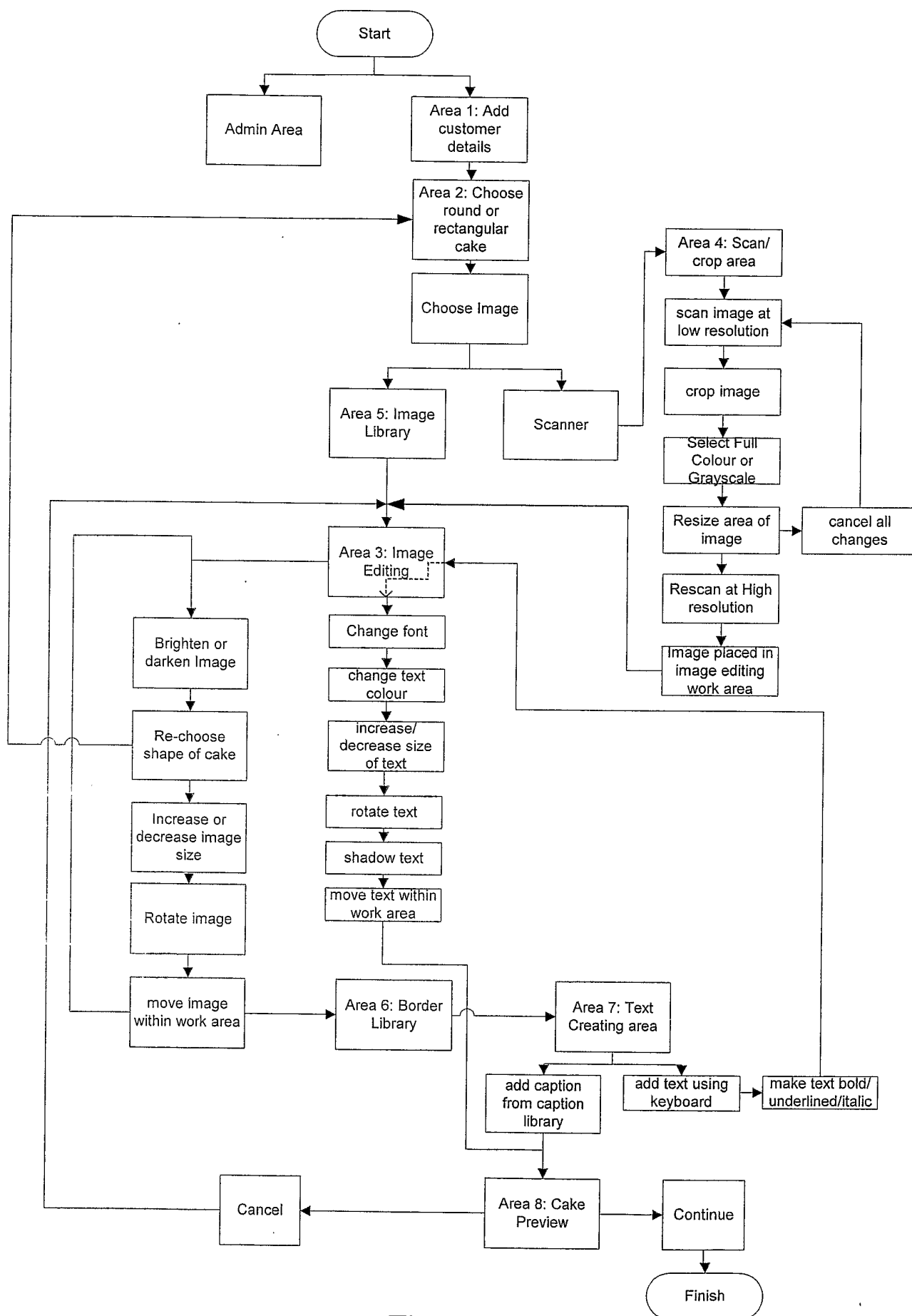


Fig 1

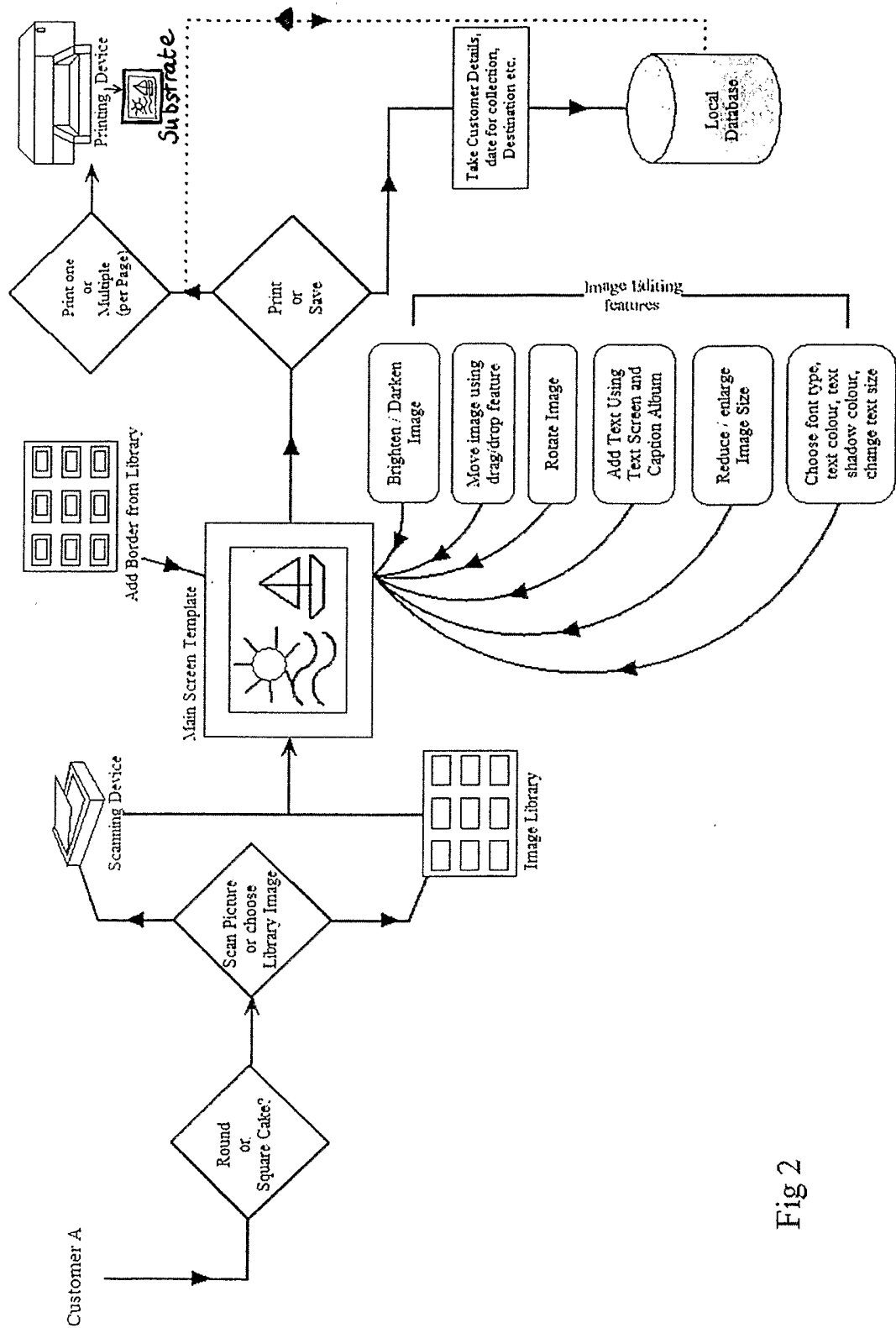


Fig 2

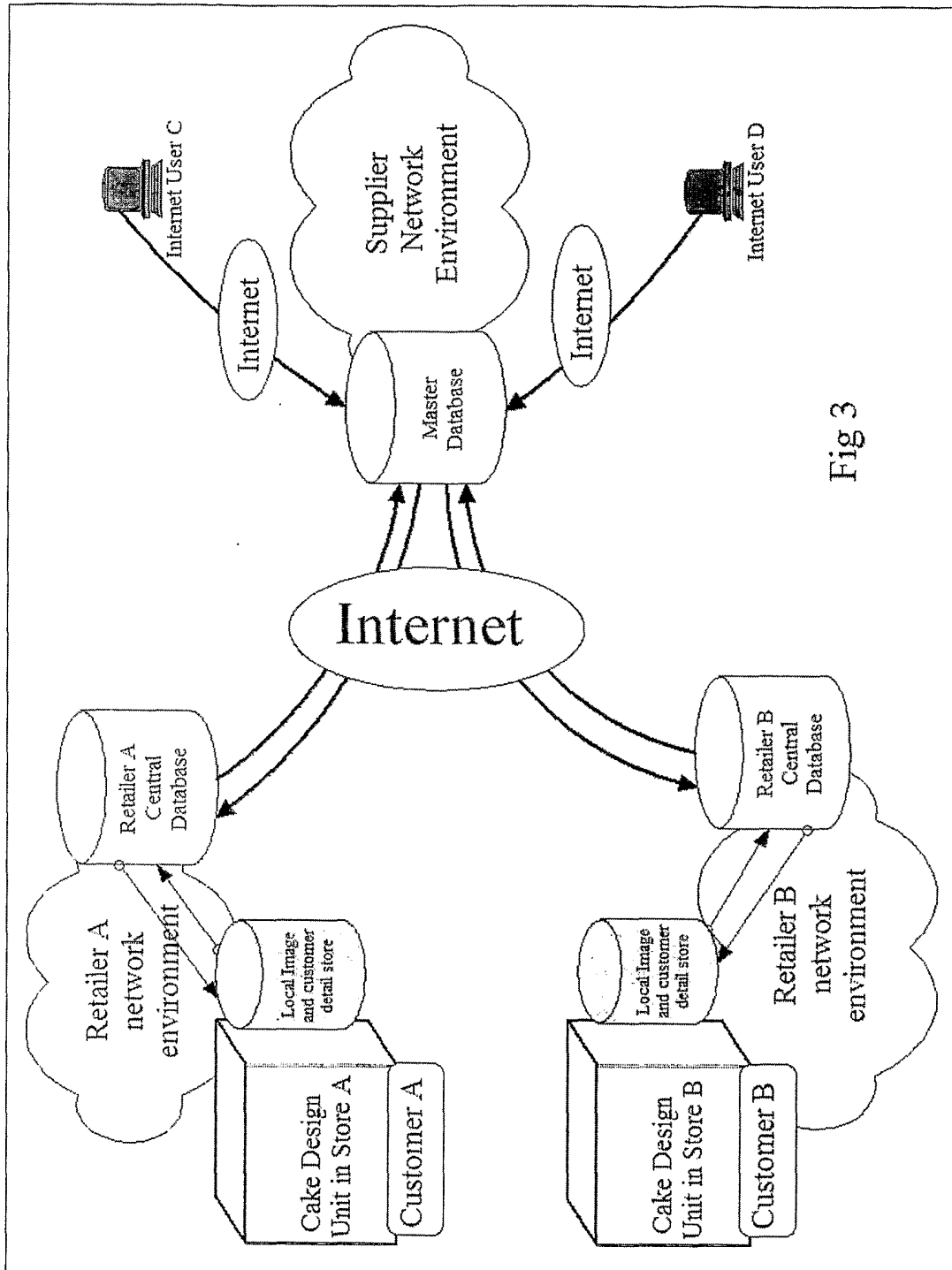


Fig 3

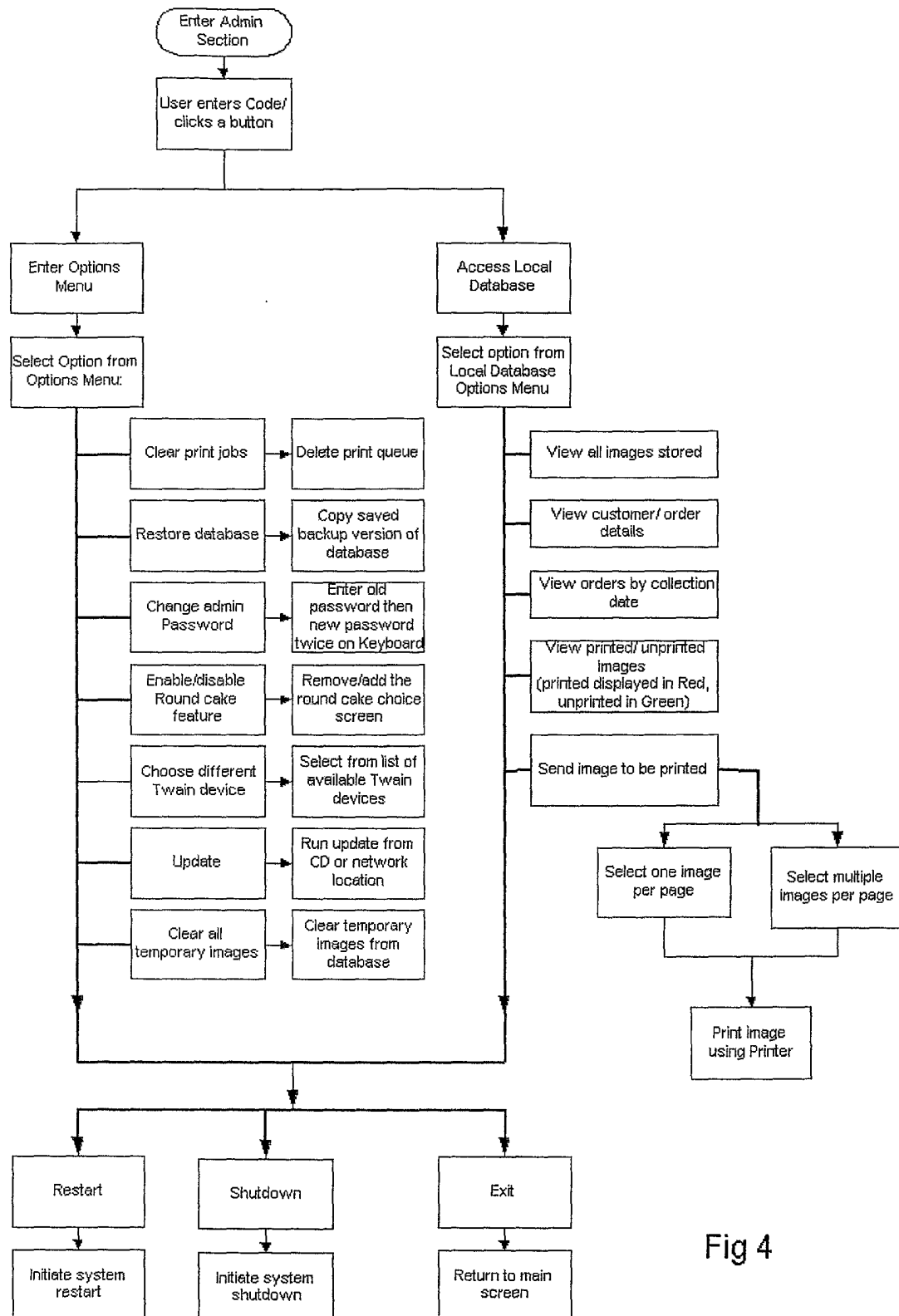


Fig 4

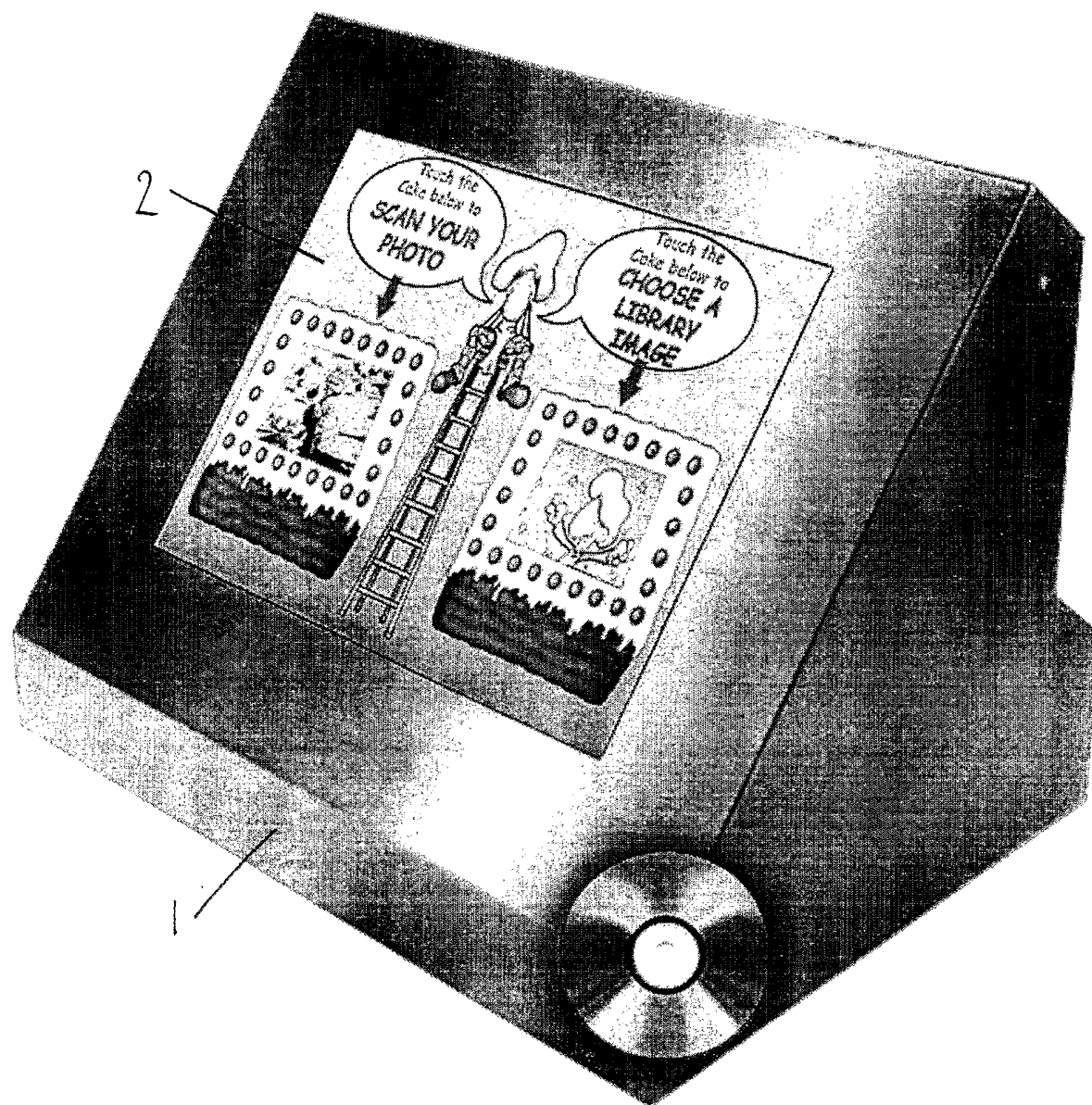


Fig 5

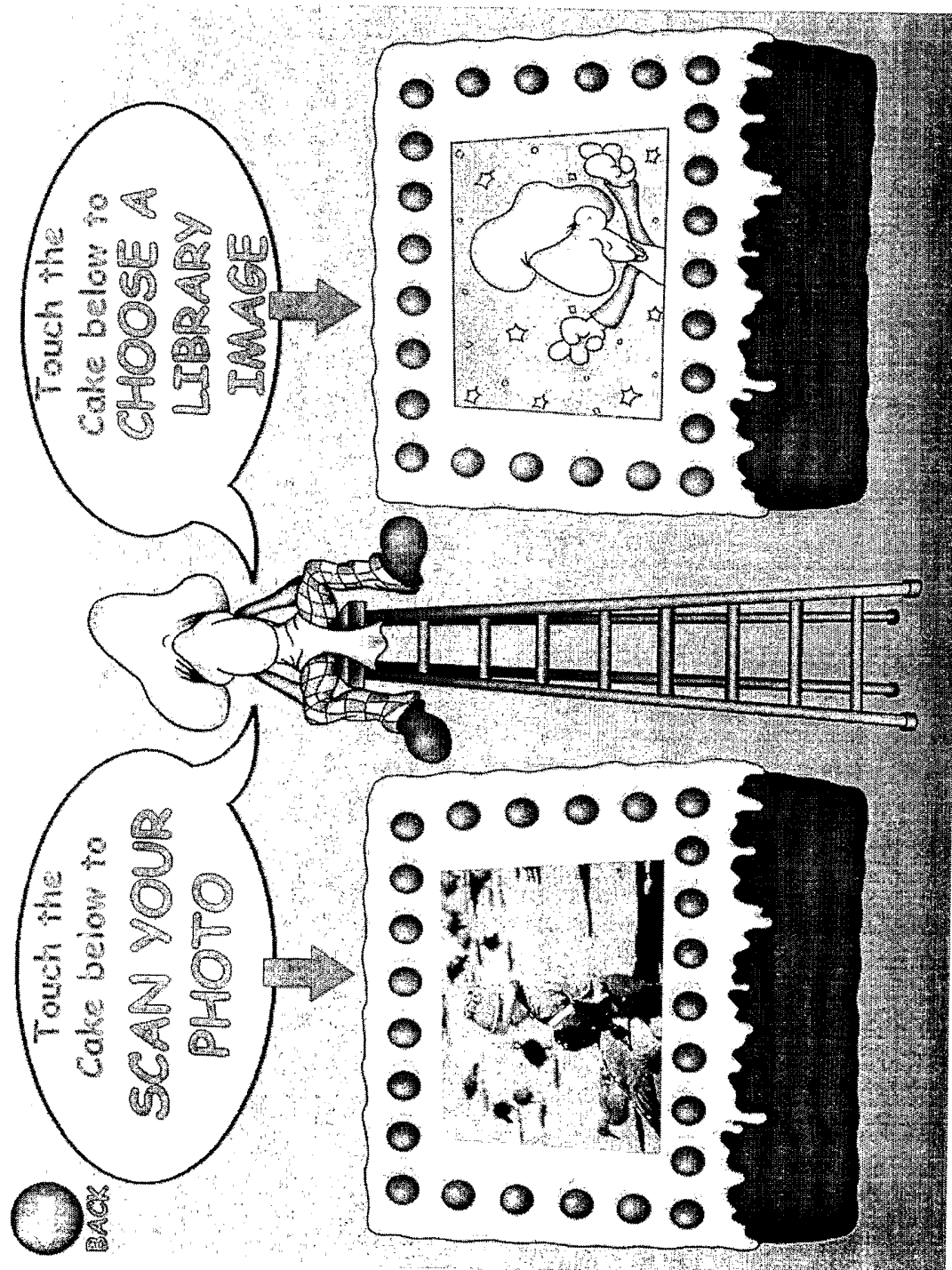


Fig. 6

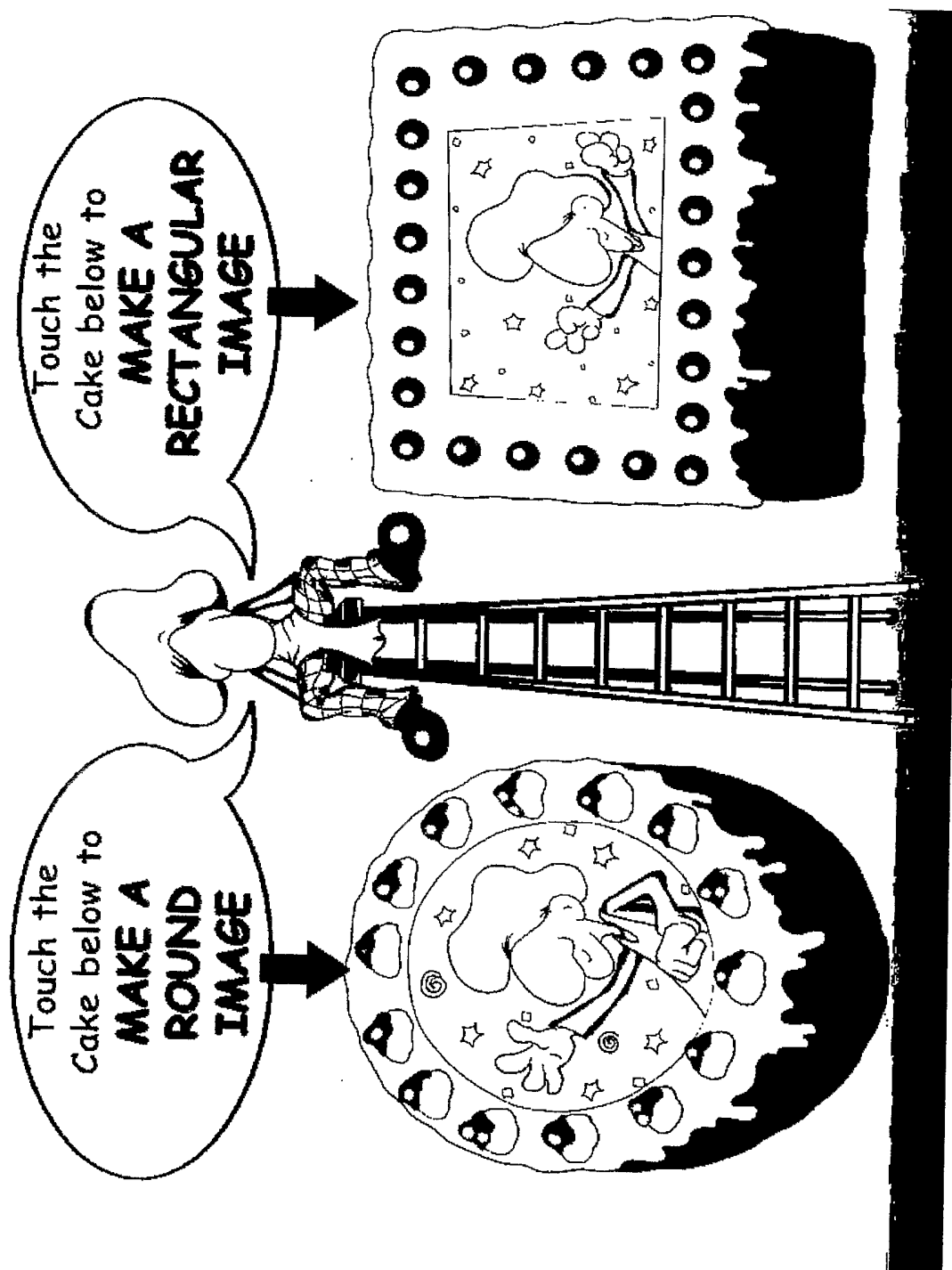


Fig. 7

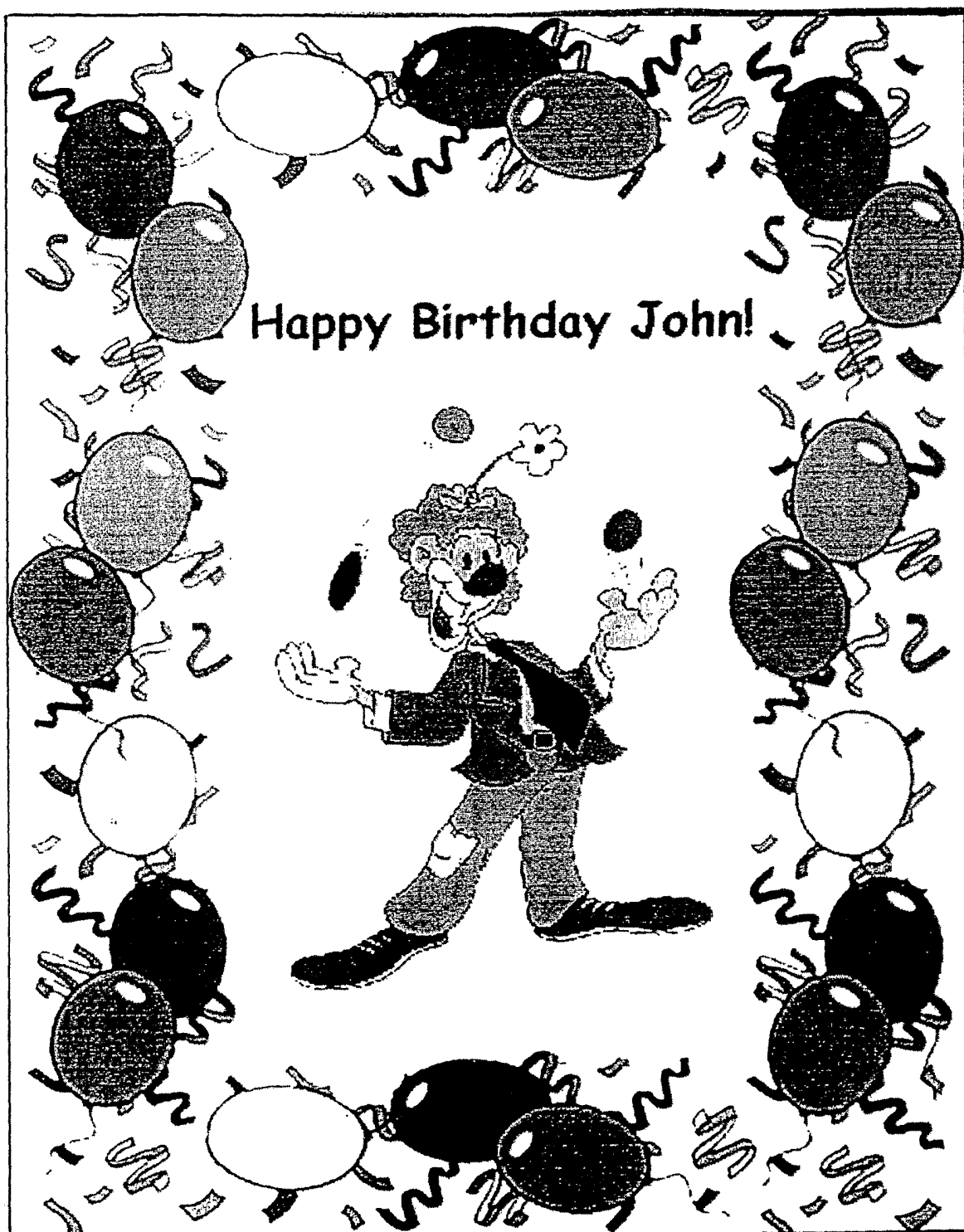


Fig 8

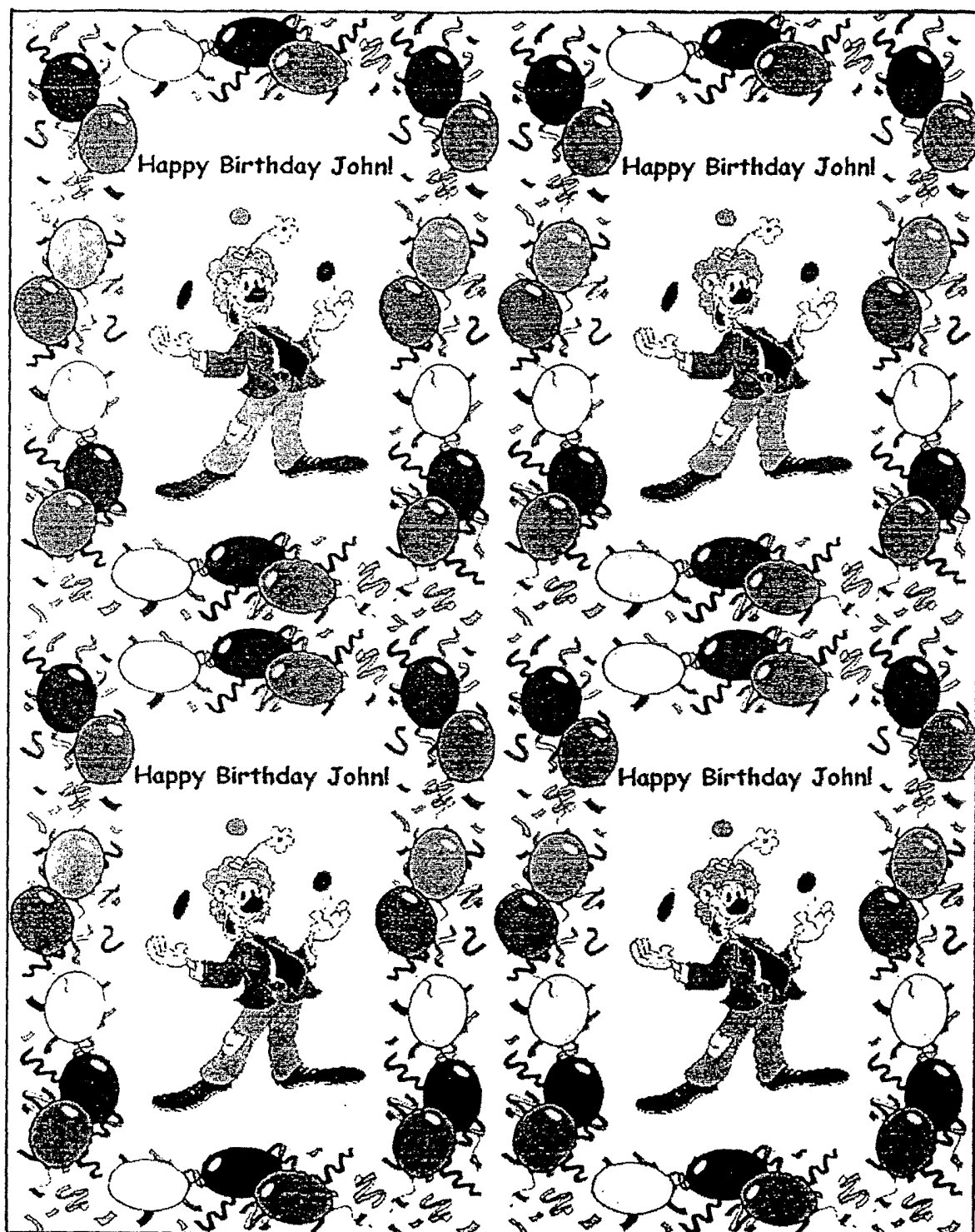


Fig 9