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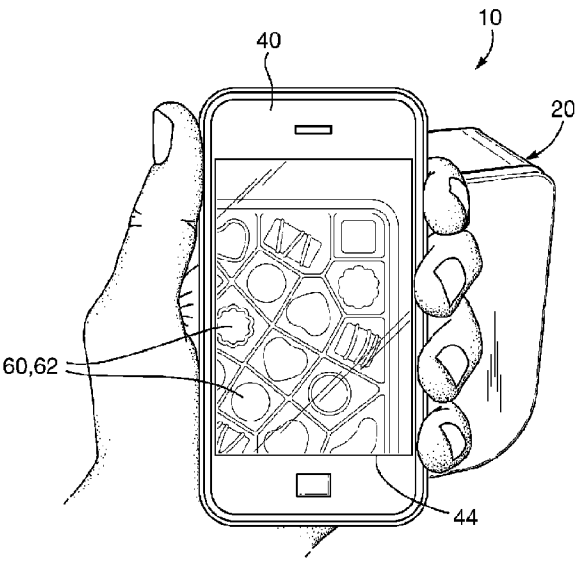
(54) Titre : PROCEDE POUR LA FOURNITURE D'UNE REPRESENTATION VISUELLE DU PRODUIT CONTENU A L'INTERIEUR D'UN EMBALLAGE

(54) Title: A METHOD FOR PROVIDING A VISUAL REPRESENTATION OF PRODUCT CONTENTS WITHIN A PACKAGE



(57) Abrégé/Abstract:
A system and method that enables a wireless communication device to provide information about a product contained in a package. Preferably, the system and method provides to the holder of a wireless communication device a visual image of the product contained within a non-transparent package. Most preferably, the system and method provides the perception or illusion of seeing the product through the non-transparent package.

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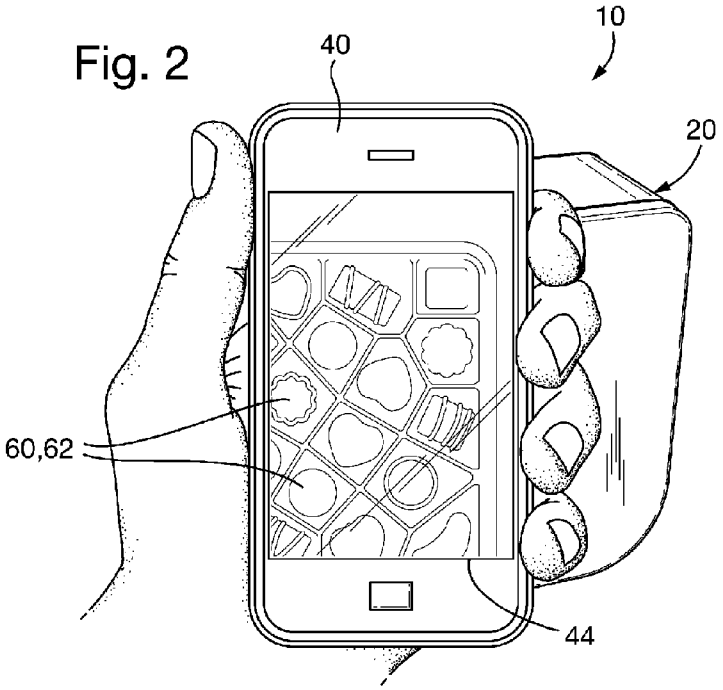
(54) Title: A METHOD FOR PROVIDING A VISUAL REPRESENTATION OF PRODUCT CONTENTS WITHIN A PACKAGE

(57) Abstract: A system and method that enables a wireless communication device to provide information about a product contained in a package. Preferably, the system and method provides to the holder of a wireless communication device a visual image of the product contained within a non-transparent package. Most preferably, the system and method provides the perception or illusion of seeing the product through the non-transparent package.

Fig. 2



WO 2013/135899 A1

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Description

A METHOD FOR PROVIDING A VISUAL REPRESENTATION OF PRODUCT CONTENTS WITHIN A PACKAGE

Technical Field

[0001] The present invention relates to methods and systems to enable a visual image of the product contents within an opaque package. For example, such contents may be a consumer product enclosed within a metal package. Although such opaque packages have many good qualities, such as durability and reduction of damage to the product caused by light, they have the disadvantage that the end user or consumer cannot easily see the product without first opening the package.

Background Art

[0002] Metal packaging can be divided into disposable packages and durable packages. Disposable metal packages, such as food and beverage cans, are intended to be disposed of and recycled very soon after opening. In fact, it is beneficial to recycle disposable cans for environmental reasons. Durable metal packages on the other hand, such as decorated tinplate boxes for premium liquors, candy, and the like, are often reused. Durable metal packages also are often distinguished from disposable metal packages in that durable metal packages often have a lid that is recloseable, while disposable metal packages often have a panel that has to be ruptured by a score or can opener.

[0003] Many products already have information embedded in a graphical code, such as a bar code, QR codes, Microsoft tags, and the like. For example, consumer product packages often have bar codes that identify the product for pricing and inventory control. Furthermore, many products may have a unique serial number printed on a tag affixed to the product.

Disclosure of Invention

[0004] A system and method enables a wireless communication device to provide information about a product contained in a package, preferably for providing to the holder of a wireless communication device a visual image of the product contained within a non-transparent package, and most preferably providing the perception or illusion of seeing the product

Date Reçue/Date Received 2021-01-22

through the non-transparent package.

[0005] In one embodiment, a method for providing on a wireless communication device an image representing contents of a package is provided. The method includes the steps of reading a readable code on the package using a camera on the wireless communication device, displaying the image representing the contents of the package on the wireless communication device when the camera is positioned to view at least a portion of the package, the image being superimposed on a view of the package. This method may be enhanced by altering the image in response to relative movement between the package and the camera such that the image displayed on the wireless communication device represents the portion of the contents of the package at which the camera is pointed.

[0006] In another embodiment, a system for providing an image representing contents of a package on a wireless communication device may be provided. The package may include a readable code. The system may further include an application configured to run on the wireless communication device in response to the wireless communication device reading the readable code, the application further being configured to display the image representing the contents of the package on the wireless communication device when the camera is positioned to view at least a portion of the package, the image being superimposed on a view of the package. This may be enhanced by altering the image in response to relative movement between the package and the camera such that the image displayed on the wireless communication device represents the portion of the contents of the package at which the camera is pointed.

Brief Description of Drawings

[0007] The present invention will now be described, by way of example only, with reference to the accompanying drawings, in which;

[0008] Figure 1 is a perspective view of a durable metal package of the type to which the technology of the application may be applied;

[0009] Figure 2 is an image of a wireless communication device illustrating an image reflecting the contents of the package of claim 1; and

[0010] Figure 3 is a flow chart of an exemplary method of displaying an image

Date Reçue/Date Received 2021-01-22

representing the contents of a package according to the present invention.

Mode(s) for Carrying Out the Invention

[0011] A system and method for displaying an image representative of the contents of a package is disclosed. As more fully described below, the term "representative" is employed to illustrate that that the wireless communication device shows only a representation or illusory image of the product, as distinguished from providing an actual image of the product, as more fully described below

[0012] Referring to Figs. 1 and 2, a system 10 for displaying an image representative of the contents of a package includes a package 20 and a computing device capable of performing the operations described herein, such as a wireless communication device 40. Package 20 preferably is a rigid metal container, such as commonly use to package various products such as breath mints, premium liquor, premium or seasonal candies, and the like. Package 20 typically is formed of a decorated sheet steel or aluminium and includes a body 22 and a lid 24. Often lid 24 attached to body 22 by a hinge. Preferably, neither body 22 nor lid 24 is transparent or includes a transparent portion. Thus, preferably a product 60 contained within package 20 cannot be seen by a potential purchaser without first opening lid 24.

[0013] Package 20 has a code readable 26 located on it. Readable code 26 preferably is a two dimensional bar code, such as a QR code, although any other suitable codes may be used. For example, a UPC symbol or a High Capacity Colour Barcode, such as a Microsoft tag, may be employed. Preferably, code 26 is located on the exterior of body 22 or exterior of lid 24 to enable a user to view the image of the product before purchase, although internal locations of the code may be used.

[0014] Product 60 may encompass a product having multiple pieces, such as multiple chocolates 62, which may be oriented in a layer, as shown in the figures. Pieces 62 may be located in approximately planar layers, not shown in the figures. The product 60 may also encompass parts of a connected system, such as parts of tool such as an electric drill or other tool that may have several connected parts. Alternatively, product 60 may

Date Reçue/Date Received 2021-01-22

encompass a single-piece product, such as a bottle of liquor.

[0015] The computing device may be a wireless communication device 40 such as a smart phone or like handheld wireless device accessible to consumers and shoppers. The computing device may include a camera (not shown in the figures) and a display 44. The computing device may be any device that is capable of reading the readable code 26. Display 44 encompasses any suitable visual display, and preferably is a touch screen display. Preferably, wireless communication device is a conventional device such commercially available an iPhoneTM operating iOS 6TM or equivalent smart phone operating an Apple, Android, Microsoft or other operating system. In part because of the rapid cycle time, the computing devices referred to herein are not intended to be limited to any particular technology. The steps performed may be controlled by an "app" or "application," as that term is understood by people familiar with wireless communication devices, operation, and architecture.

[0016] To operate the system, a user scans code 26 with a device 40. A pre-installed application or other enabling technology recognizes the code and interprets the information embedded in the code. The term "scan" is employed to refer to any means for performing the seeing and recognizing functions. In response to reading code 26, device 40 downloads an application that includes data for the particular product 60.

[0017] The application or software residing on device 60 receives the data and processes it according to known algorithms, as will be understood by persons familiar with smart phone apps and like technology. Device 60 renders an illusory image, preferably an augmented illusory image, of product 60 on display 44 so that the image of the contents is superimposed over the live camera view of the tin. The image could either be in 2D such a photograph of the product or in 3D view so that the three dimensional form of the product is visible as the device screen is manipulated relative to the tin. The 3D view may be textured so as to provide a life like representation of how the product will look when the lid is removed. In this regard, the image shown reflects the portion of product 60 at which camera 42 is pointed.

Date Reçue/Date Received 2021-01-22

[0018] Device 40 preferably looks for a visual anchor on or part of package 20 as a reference to rendering the image. For example, the application and data control the camera to recognize a logo on package 20. Upon recognizing the logo, the application can determine the relative position and relative distance between package 20 and device 40. Accordingly, the application may render an image on display 44 from the downloaded or stored data that correspond to the orientation and size of the product such that the user is given the illusion that the application is seeing through the package to enable viewing of the product contents, as shown in Figure 2. Additional information form the tin can be input to the Application such that the display represents a fully accurate view of the product. For example a time temperature indicator on the tin could be interpreted and if the product is past its sell by date or has seen excessive temperature the image displayed could be adjusted accordingly to show a poorer quality product. Many types of sensors may be employed, for example; time, temperature, headspace gas indicator, tamper evidence.

[0019] Alternative visual anchors may be employed. For example, the overall envelope (that is, outer surfaces) of the package may be employed to register the image of the display with the package. Also, multiple anchors may be employed. And the angular relationship between the visual anchor and camera 42 may enable the image to show a perspective view of product 60.

[0020] Further, the application enables the rendered image to move upon relative movement between package 20 and device 40. Zooming may also be enabled. Thus, in operation, upon initiation, device 40 may render an image showing the top right portion of pieces 62 within package 20, upon movement down and to the left toward the bottom left portion, display 4 would alter the displayed image to display a continuously progressing image as if camera 42 could see through lid 24 to display pieces 62. Zooming in and out would further enhance the illusion by making the image larger or smaller.

[0021] The present application also may include controls, preferably virtual buttons located on touch screen display, to enable the illusion of seeing

not only through package 20 but also through a top or several upper layers of pieces 62. In some embodiments, images representing cross sections of the product(s) may be enabled by the application.

[0022] The present invention has been described with respect to a particular embodiment and to particular technology. The present invention is not limited to the particular embodiments, details, and technology set out in this disclosure, but rather encompasses variations as will be understood by persons familiar with the packages and technology. Further, the technology is referred to without presenting commonplace details for background technology. For example, the structure and function of a smartphone, the process for downloading and initiating applications for smartphones, algorithms for rendering product data into images, and the like are well-known technology that is not set out in detail, as those technologies will be understood by persons familiar with smartphone and image processing technology.

Date Reçue/Date Received 2021-01-22

Claims:

1. A method for providing an image on a wireless communication device corresponding to contents of a package, the method comprising the steps of:

reading a readable code on the package using a camera on the wireless communication device;

displaying the image representing the contents of the package on the wireless communication device when the camera is positioned to view at least a portion of the package, the image being superimposed on a view of the package; and

altering the image in response to relative movement between the package and the camera such that the altered image displayed on the wireless communication device represents the portion of the contents of the package at which the camera is pointed.

2. The method of claim 1, further comprising the step of downloading an application and in response to the reading step, the application including data that can be rendered to produce the altered image.

3. The method of claim 1 or claim 2, wherein relative position between the camera and the package is determined by the camera viewing a visual anchor of the package.

4. The method of claim 3 wherein the visual anchor is an anchor image on the package.

5. The method of claim 3 wherein the visual anchor is an envelope of the package.

6. The method of claim 2, wherein the contents of the package include multiple pieces that are configured into layers, and wherein the data can be rendered to produce additional altered images representing layers within the contents.

7. The method of claim 6 wherein the wireless communication device displays virtual buttons, and activating the buttons moves the altered image to a lower layer within the contents.

Date Reçue/Date Received 2021-01-22

8. The method of any one of claims 1 through 7, wherein the wireless communication device has a touch screen display, and the displaying step is performed on the touch screen display.

9. The method of claim 8 further comprising a step of displaying a piece of the contents to display details of the piece.

10. The method of any one of claims 1 through 9, further comprising the step of zooming in and out on the altered image to show an enlarged portion of the altered image.

11. The method of any one of claims 1 through 10, wherein the altered image displays modified product if this is indicated by a sensor on the pack, such as an indicator for time, temperature, headspace gas or tamper evidence.

12. A system for providing, on a wireless communication device, an image representing contents of a package, the system comprising:

a package containing a product, the package including a readable code; and

an application configured to run on the wireless communication device in response to the wireless communication device reading the readable code, the application further being configured to:

display the image representing the contents of the package on the wireless communication device when a camera is positioned to view at least a portion of the package, the image being superimposed on a view of the package, and

alter the image in response to relative movement between the package and the camera such that the altered image displayed on the wireless communication device represents the portion of the contents of the package at which the camera is pointed.

13. The system of claim 12, wherein the application is capable of receiving data in response to scanning the code, the application capable of using the data to render the altered image.

Date Reçue/Date Received 2021-01-22

14. The system of claim 13, wherein the product includes multiple pieces that are configured into layers, and wherein the data can be rendered to produce additional altered images representing layers within the product.

15. The system of claim 14, wherein wireless communication device displays virtual buttons, and activating the buttons moves the altered image to a lower layer within the product.

16. The system of any one of claims 12 to 15, wherein the wireless communication device has a touch screen display, and wherein the display of the image representing the contents of the package is performed on the touch screen display.

Date Reçue/Date Received 2021-01-22

Fig. 1

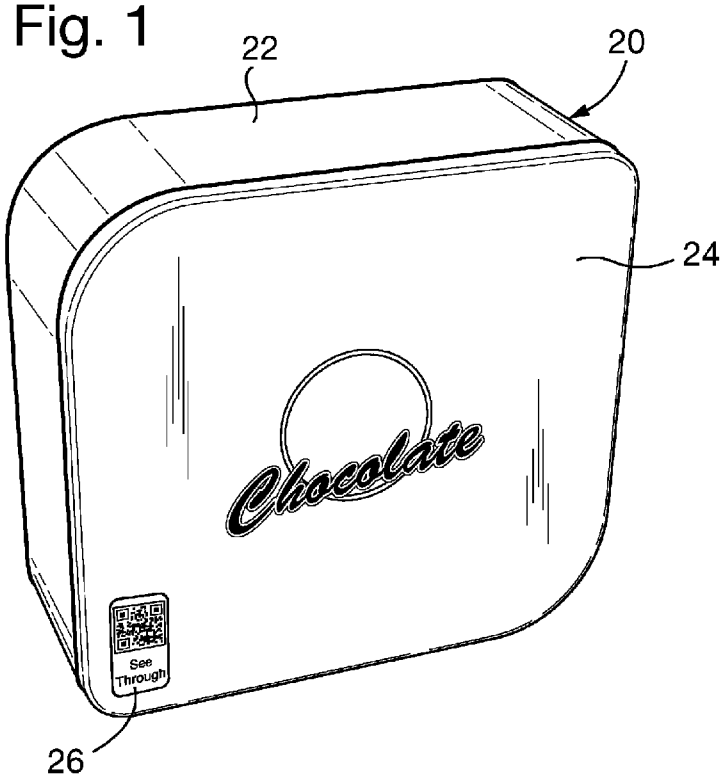


Fig. 2

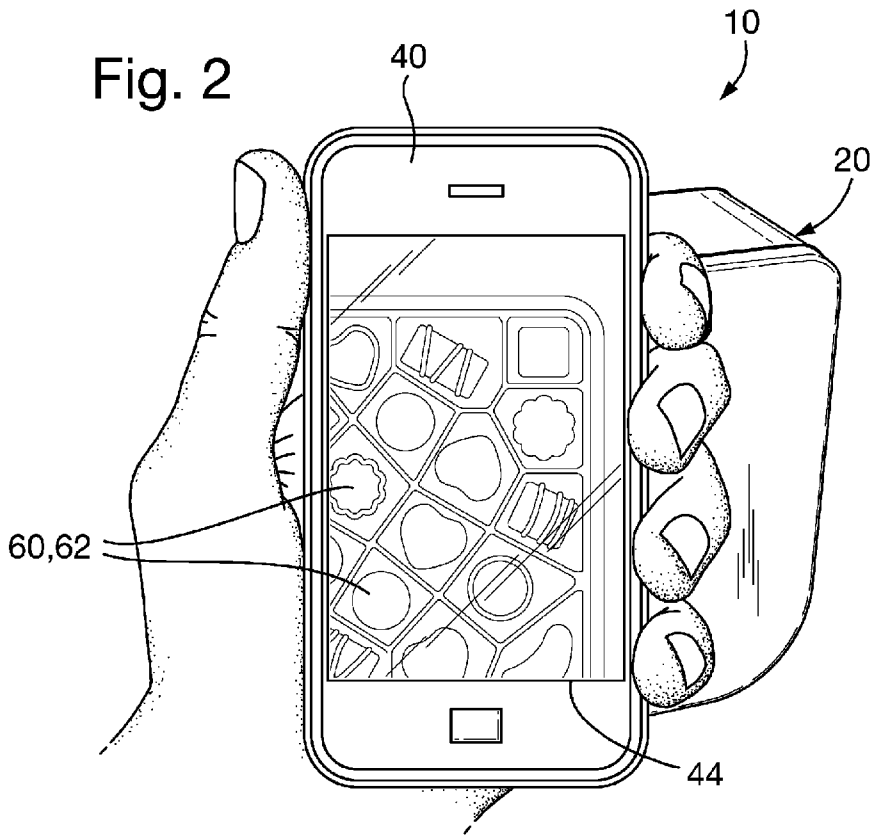
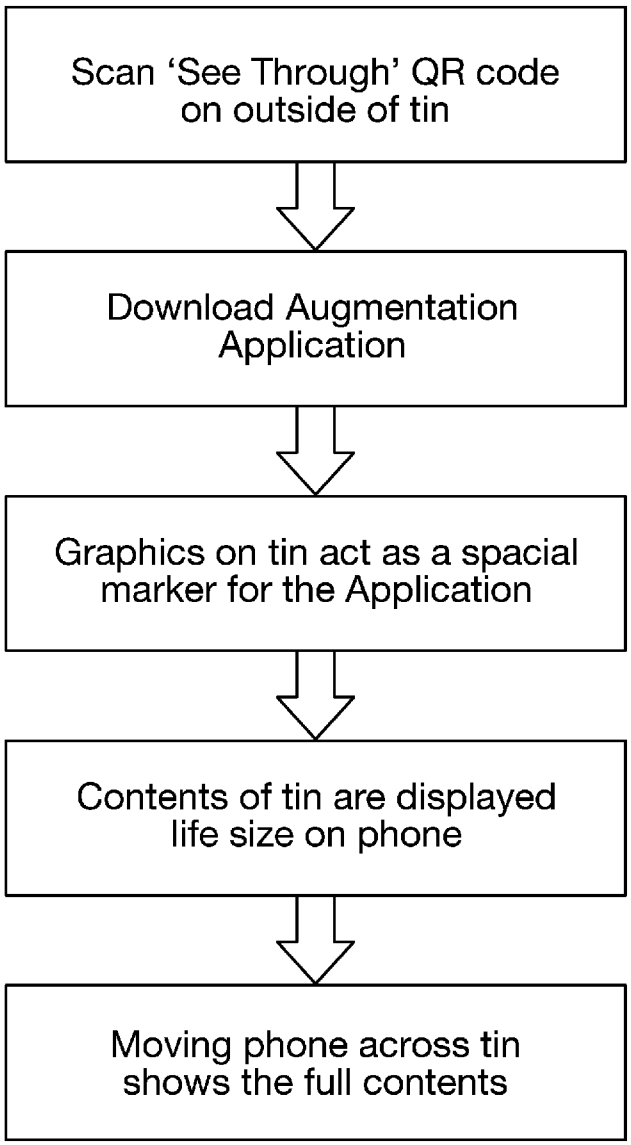
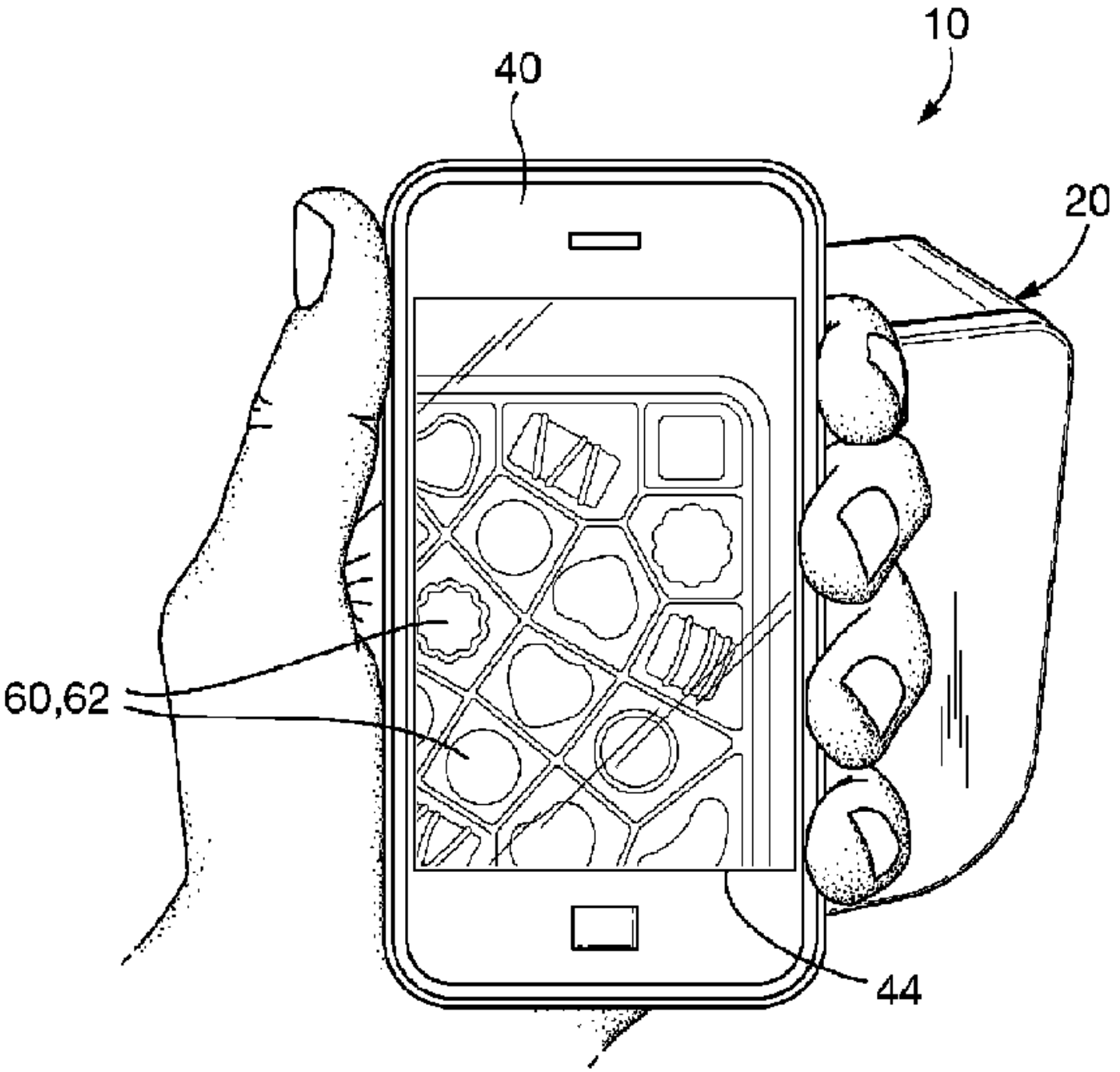


Fig. 3


Scan 'See Through' QR code on outside of tin
Download Augmentation Application
Graphics on tin act as a spacial marker for the Application
Contents of tin are displayed life size on phone
Moving phone across tin shows the full contents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