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- (71) Applicant (for all designated States except US): **GOJO INDUSTRIES, INC.** [US/US]; One GOJO Plaza, Suite 500, P.O. Box 991, Akron, Ohio 44309 (US).
- (72) Inventors; and
- (71) Applicants (for US only): **PELFREY, Keith Allen** [US/US]; 828 Pegan Drive, Wadsworth, Ohio 44281 (US). **WEGELIN, Jackson W.** [US/US]; 2508 Graham Road, Stow, Ohio 44224 (US).
- (74) Agents: **HODGKISS, Timothy A.** et al.; Renner, Kenner, Greive, Bobak, Taylor & Weber, First National Tower, Suite 400, 106 S. Main St., Akron, Ohio 44308-1412 (US).

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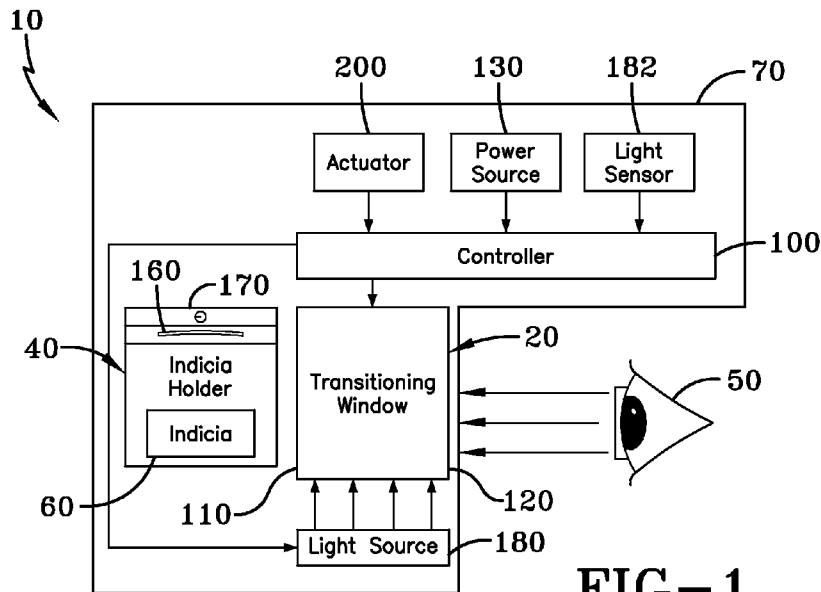


FIG-1

(57) Abstract: A system for selectively revealing indicia to an observer comprises a transitioning window having a receiving surface and a viewing surface. The receiving surface is positioned in optical communication with an indicia holder that is configured to removably retain indicia, such as information content. During operation, the transitioning window transitions from a substantially opaque state to a substantially transparent state so as to reveal or otherwise display the indicia to an observer via the viewing surface.

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SYSTEM FOR SELECTIVELY REVEALING INDICIA

TECHNICAL FIELD

Generally, the present invention relates to a system to selectively reveal removable
5 indicia. In particular, the present invention is directed to a transitioning liquid crystal (LC)
window to selectively reveal removable indicia. More particularly, the present invention is
directed to a transitioning liquid crystal (LC) window that is configured to selectively reveal
removable indicia in association with a dispenser, appliance, or other device.

BACKGROUND ART

Advertisements, displays, and other informational signage or content have achieved a
level of ubiquity in our environment such that, over time, the population has become very adept
at blocking out or otherwise ignoring the information or message conveyed therefrom. To
overcome this obstacle in an effort to attract an individual's attention, advertisement campaigns
15 are painstakingly designed and employ a variety of techniques to present information in a
compelling manner and to appeal to the interests and senses of the target individual. Thus, to a
large degree, the success of a particular advertising or marketing effort to communicate its
message to potential consumers is heavily reliant on the medium chosen. However, the cost
and expense of developing and producing a marketing campaign with the requisite appeal
20 needed to gain a consumer's interest is significant. Additionally, an advertising campaign that
utilizes moving, dynamic images or content to attract the attention of a target individual is
costly, as it requires a significant amount of production effort to implement such a concept.

In addition to the cost of producing dynamic informational content, the cost of display
units, such as flat screen displays upon which the content is presented, as well as the costs
25 associated with operating such displays, are also significant expenses, thus restricting the total
number of locations where such displays will ultimately be installed. Furthermore,
continuously updating the dynamic content presented on such displays is costly and time
consuming as well. As such, there are significant costs associated with installing and
maintaining a display capable of rendering dynamic informational content. In contrast,
30 informational content that is static or fixed, such as printed content embodied in posters,

billboards, and magazines, is much less costly to produce than that of dynamic content but is generally less effective in attracting the interest and attention of a target individual.

Therefore, there is a need for a low-cost, low-power system for selectively revealing indicia, such as a static printed image via a transitioning window, which transitions between
5 substantially opaque and substantially transparent states to capture an individual's attention. Additionally, there is a need for a system for selectively revealing indicia that utilizes a transitioning window in connection with indicia that can be removably replaced as desired. Furthermore, there is a need for a system for selectively revealing indicia that utilizes a transitioning window in connection with a dispenser or any other suitable structure.

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SUMMARY OF INVENTION

In light of the foregoing, it is a first aspect of the present invention to provide a system for selectively revealing indicia.

It is another aspect of the present invention to provide a system for selectively revealing
15 indicia to an observer comprising a housing having a transitioning window, wherein said transitioning window has substantially opposed receiving and viewing surfaces, and wherein said window is configured to transition between an at least partially transparent state and an at least partially opaque state; a controller coupled to said transitioning window, said controller adapted to store a predetermined time interval; and an indicia holder carried by said housing
20 and configured to support indicia so as to be in optical alignment with said receiving surface, wherein said controller controls said transitioning window to periodically transition between said at least partially opaque state and said at least partially transparent state at said predetermined time interval, so as to allow the indicia to be periodically viewable via said viewing surface through said receiving surface.

It is still another aspect of the present invention to provide a system for dispensing
25 material from a refill unit carrying at least one dispensing item comprising a housing having a transitioning window, wherein said transitioning window has substantially opposed receiving and viewing surfaces, and wherein said window is configured to transition between an at least partially transparent state and an at least partially opaque state; a controller coupled to said
30 transitioning window and said dispensing unit, said controller detecting at least one operational parameter associated with said dispensing unit; a dispensing unit carried by said housing and

adapted to be fluidly coupled to the refill unit, wherein upon the actuation of said dispensing unit, the at least one dispensing item is dispensed; and an indicia holder carried by said housing and configured to support indicia so as to be in optical alignment with said receiving surface, wherein when said operational parameter meets predetermined criteria, said transitioning window transitions from said at least partially opaque state to said at least partially transparent state, so as to allow the indicia to be viewable via said viewing surface through said receiving surface.

It is yet another aspect of the present invention to provide a system for selectively revealing indicia to an observer comprising a housing having a transitioning window, wherein said transitioning window has substantially opposed receiving and viewing surfaces, and wherein said window is configured to transition between an at least partially transparent state and an at least partially opaque state; a controller coupled to said transitioning window; a sensor coupled to said controller to detect an input; and an indicia holder carried by said housing and configured to support indicia so as to be in optical alignment with said receiving surface, wherein upon the detection of the input by said sensor, said transitioning window transitions from said at least partially opaque state to said at least partially transparent state, so as to allow the indicia to be viewable via said viewing surface through said receiving surface.

BRIEF DESCRIPTION OF THE DRAWINGS

These and other features and advantages of the present invention will become better understood with regard to the following description, appended claims, and accompanying drawings wherein:

Fig. 1 is a block diagram of a system for selectively revealing indicia in accordance with the concepts of the present invention;

Fig. 1A is a block diagram of the system for selectively revealing indicia that does not utilize a light source in accordance with the concepts of the present invention;

Fig. 2 is a block diagram of the system for selectively revealing indicia when configured for use with a dispenser in accordance with the concepts of the present invention;

Fig. 3A is a front elevational view of the system for selectively revealing indicia embodied as a fluid dispenser, whereby the transitioning window is substantially opaque, so as

to obscure the indicia disposed therebehind in accordance with the concepts of the present invention;

Fig. 3B is a side elevational view of the system for selectively revealing indicia shown in Fig. 3A in accordance with the concepts of the present invention;

5 Fig. 3C is a front elevational view of the system for selectively revealing indicia embodied as a fluid dispenser, whereby the transitioning window is substantially transparent, so as to permit the display of the indicia therethrough in accordance with the concepts of the present invention;

10 Fig. 4 is a perspective view of the system for selectively revealing indicia when embodied as a towel dispenser in accordance with the concepts of the present invention;

Fig. 5 is a perspective view of the system for selectively revealing indicia when utilized as a stand alone device in association with a urinal in accordance with the concepts of the present invention;

15 Fig. 6 is a perspective view of the system for selectively revealing indicia when utilized in association with a spray mister in accordance with the concepts of the present invention;

Fig. 7 is a perspective view of the system for selectively revealing indicia when configured as a stand alone device to provide a remotely located hands-free actuator, such as in a faucet, in accordance with the concepts of the present invention; and

20 Fig. 8 is a block diagram of an alternative system for selectively revealing indicia that utilizes a timer that is made integral with a dispenser in accordance with the concepts of the present invention.

BEST MODE FOR CARRYING OUT THE INVENTION

25 A system for selectively revealing indicia is generally referred to by the numeral 10, as shown in Figs 1-2. In particular, the system 10 includes a transitioning window 20, such as a polymer dispersed liquid crystal window, which is configured to selectively transition from a substantially, or at least partially, opaque state to a substantially, or at least partially, transparent state. Thus, the use of the terms "opaque state" and "transparent state" as used in the following discussion contemplate opaque and transparent states that are substantially, or at
30 least partially, opaque and substantially, or at least partially, transparent. Continuing, the transitioning window 20 is maintained by the system 10 so that it separates an indicia holder 40

from the line of sight or field of view of an observer 50. As such, the indicia holder 40 is configured to removably retain indicia 60, such as a printed advertisement or other informational content. For the purposes of the following discussion, the term “indicia” is defined as any information, communication, advertisement, image, message, or the like. For example, the indicia 60 may comprise printed characters on a section of paper. Thus, during operation of the system 10, the observer 50 is permitted to view the indicia 60 when the window 20 transitions from the opaque state to the transparent state. The transition between opaque and transparent states may be controlled in accordance with various criteria, such as the input from various stimuli, including the actuation of a switch or via a proximity detector that is configured to detect the presence of a person or the person’s hands. As such, the system 10 allows the message or informational content to be conveyed by the indicia 60 in a manner that captures the attention of the observer 50, thus enhancing the effect of informational content provided by the indicia 60. Furthermore, the indicia holder 40 permits a user to quickly and readily change the indicia 60, thereby allowing the informational content conveyed thereby to be updated in a quick and simple manner. While it is understood that a continuum exists between the substantially transparent state, the partially transparent state, the partially opaque state, and the substantially opaque state provided by the transitioning window 20, it should be appreciated that in general the observer 50 will more clearly view the indicia 60 when the transitioning window 20 is in a transparent state than when the transitioning window is in an opaque state.

Specifically, the system 10 is carried or otherwise disposed within a housing 70 that may be configured to be integral with or otherwise associated with any desired structure, including, but not limited to, a dispenser, a fixture, or an appliance. For example, the housing 70 may be formed so as to be integral with a soap dispenser, a towel dispenser, a spray mister, a toilet, or a urinal. Alternatively, it should be appreciated that the housing 70 may be formed as a standalone device that may be mounted in any desired location. Continuing, the housing 70 maintains a controller 100 that comprises any suitable general-purpose or application-specific computing device suitable for carrying out the functions to be discussed. In one aspect, the controller 100 may maintain non-volatile memory, volatile memory, or a combination of both to facilitate the operation of the system 10. Furthermore, it should be appreciated that the

housing 70 may be formed of any suitable material, such as plastic, steel, or aluminum for example, and may be of any suitable size or shape.

Electrically coupled to the controller 100 is the transitioning window 20, which is configured to selectively transition from a substantially transparent state to a substantially opaque state and vice versa. The transitioning window 20 maintains a receiving surface 110
5 opposite a viewing surface 120, and although the transitioning window 20 may be configured such that the surfaces 110 and 120 oppose each other, other configurations are also contemplated, whereby the surfaces 110 and 120 may be oriented in any desired angle or position with regard to one another. Moreover, the opposed surfaces 110 and 120 may be
10 dimensioned to take on any desired shape, size, or contour. The transitioning window 20 comprises a window formed of polymer dispersed liquid crystals (PDLC) or may be comprised as a suspended particle device (SPD). However, it is also contemplated that the transitioning window 20 may comprise an electrochromic device, as well as any other device which may be controlled so as to transition from an opaque, or substantially opaque, state to a transparent, or
15 substantially transparent, state.

Coupled to the controller 100 is a power source 130 that is configured to power the components of the system 10. The power source 130 may comprise a portable D.C. (direct current) power source, such as a battery, or may be configured to receive and convert power from an A.C. (alternating current) mains power source, such as 120 VAC (alternating current),
20 into a format compatible for operating the system 10. It is also contemplated that the power source 130 may comprise a solar or photovoltaic power source or any other source of power. It should also be appreciated that the power source 130 may comprise a combination of portable power and solar and/or mains power or any other suitable power source. In addition, the power source 130 may solely power the system 10 or, in other embodiments, may power both the
25 system 10, as well as other aspects of the structure with which the system 10 is integrated. For example, the system 10 may be made integral with a hands-free dispenser configured to dispense a fluid, which are both powered by the power source 130. Furthermore, due to the reduced power requirements of the transitioning window 20, extended operation of the system 10 is permitted when batteries or other portable power source is used.

Maintained adjacent to the receiving surface 110 is the indicia holder 40 that is configured to removably retain indicia 60 in optical alignment with the transitioning window

20 so that it can be selectively revealed to the observer 50 via the viewing surface 120 when the transitioning window 20 is in a transparent, or substantially transparent, state. While the indicia holder 40 is discussed as being adjacent the receiving surface 110, it should be appreciated that the indicia holder 40 may be oriented in any desired position with respect to the receiving surface 110 as long as it is in optical communication therewith. For example, the
5 indicia holder 40 may be remotely located from the receiving surface 110, while the image from the indicia 60 is routed to the receiving surface 110 via mirrors or any suitable means.

Continuing, the indicia holder 40 may comprise any suitable device capable of holding, supporting, carrying, or otherwise maintaining the indicia 60 in place, while, in other
10 embodiments, still permitting the indicia 60 to be removed and replaced. As such, the indicia holder 40 allows the user maintaining the system 10 to readily customize and/or update the content provided by the indicia 60. However in certain embodiments, it is foreseen that the indicia 60 may be permanently mounted or placed in the indicia holder 40.

In one aspect, the system 10 may be configured with an access port 160 within the
15 housing 70, such as a slot for example, that allows an individual to directly access the indicia 60 to thereby remove or replace it as desired. It is also contemplated that access to the indicia holder 40, via the access port 160, may be restricted to only authorized individuals via a locking device 170. The locking device 170 may comprise a locking door or any other suitable device that prevents one from removing and/or inserting indicia into the indicia holder 40
20 without the appropriate authorization.

The indicia 60 may comprise any suitable material that is permitted to be held in place by the indicia holder 40 or that is permitted to be placed in optical communication with the receiving surface 110 of the transitioning window 20. In one aspect, the indicia 60 may comprise an advertisement, signage, and/or text/graphic content, as well as any other
25 informational content. For example, the indicia 60 may be disposed upon a paper or cardboard section, or upon any other suitable material, which is dimensioned to be received and retained by the indicia holder 40. For example, when the system 10 is used in association with that of a soap dispenser, the indicia 60 may provide information that encourages the washing of the user's hands.

30 It is also contemplated that in certain embodiments, the indicia 60 may be illuminated by any suitable illumination source. For example, the indicia 60 may be illuminated by a light

source 180 that is configured to operatively communicate light with the transitioning window 20. As such, light emitted from the light source 180 may be directed to one or more edges of the transitioning window 20 via a light pipe, optical fiber, or other suitable light routing means. By supplying the light to the edge of the window 20, the light will be carried through the transitioning window 20 so as to illuminate the indicia 60. Such operation serves to further draw the attention of the observer 50 to the indicia 60. It is also contemplated that the light source 180 may be activated based on the change in the ambient light surrounding the system 10 as detected by a light sensor 182 coupled to the controller 100. Alternatively, the system 10 may be configured without the light source 180, as shown in Fig. 1A, while still allowing the observer 50 to view the indicia 60 using the environmental ambient light surrounding the system 10.

The transition of the transitioning window 20 between opaque and transparent states is controlled by an actuator 200, which is coupled to the controller 100. The actuator 200 may comprise a button, a switch, or other device, such as a proximity sensor, that when actuated or otherwise in receipt of suitable stimuli or other suitable input, results in the controller 100 activating the transitioning window 20 so as to transition from a substantially opaque state to a substantially transparent state to permit the display of the indicia 60 to the observer 50. For example, in the case where the actuator 200 comprises a proximity sensor that is capable of detecting the presence or non-presence of one or more individuals, the controller 100 initiates the change in state at the window 20 from opaque to transparent when an individual is in the proximity of the actuator 200 and correspondingly initiates the change in state from transparent to opaque when the individual is no longer in the proximity of the actuator 200.

In another aspect, the system 10 may be configured such that when the transitioning window 20 has transitioned to a transparent, or substantially transparent, state, a timer maintained by the controller 100 is initiated. After a predetermined amount of time, such as five seconds, has expired, the controller 100 transitions the transitioning window 20 back to an opaque, or substantially opaque, state, thereby blocking or obscuring the indicia 60 from the view of the observer 50. In addition, it should be appreciated that other schemes or protocols for controlling the transition of the transitioning window 20 between opaque and transparent states may be utilized by the system 10, and thus those disclosed herein should not be construed as limiting.

For example, the system 10, or other system, such as a hands-free dispensing system controlling the operation of the system 10, may be configured whereby the transitioning window 20 is placed in a transparent, or substantially transparent, state to display the indicia 60 when a user initiates the washing of his or her hands upon the dispensing of soap. Once the soap is dispensed, the system 10, or other system associated therewith, identifies when a sufficient amount of time, such as the time period established by the Center for Disease Control (CDC), has expired that coincides with sufficient cleaning of one's hands. Once the time period has expired, the transitioning window 20 then transitions to an opaque state, so as to indicate that it is time to rinse the soap from the user's hands. In one aspect, the indicia 60 associated with such timed process may display informational content to alert the individual of the timed process being implemented.

Thus, with the general components of the system 10 set forth, the following discussion will be directed to specific embodiments that employ the operational features previously discussed.

Therefore, an embodiment of the system 10 whereby the housing 70 comprises a dispenser 300 is shown in Figs. 2 and 3A-C. The dispenser 300 is configured to dispense liquids, such as soap for example, such that upon the actuation of the actuator 200, a dispensing unit 310, such as a pump, is energized to dispense a quantity of material or dispensing item, such as soap, maintained by a refill unit or container 320 maintained in operative communication therewith. Coinciding with the actuation of the actuator 200, the transitioning window 20 transitions from a substantially opaque state, as shown in Fig. 3A, to a transparent state, as shown in Fig. 3C, so as to display the indicia 60 for a predetermined period of time, or until the actuator 200 detects some other change in condition, such as the movement of the individual away from the proximity of the actuator 200. It should be appreciated that, as shown in Fig. 3B, the indicia holder 40 may comprise a ledge 330 upon which the indicia 60 is permitted to rest. Furthermore, while the dispenser 300 is presented as a liquid dispenser, it should be appreciated that it may be readily adapted to dispense any desired material.

In an alternative embodiment, the housing 70 maintaining the system 10 may comprise a towel dispenser 350, as shown in Fig. 4. The towel dispenser 350 maintains a dispensing slot 352 configured to provide a towel to the individual upon actuation of the actuator 200. Thus, the transitioning window 20 is configured to transition from a substantially opaque state to a

substantially transparent state when the actuator 200 is activated. Furthermore, the towel dispenser 350 may have a door 360 that can be opened to access the indicia holder 40 and indicia 60 disposed therein so that the indicia 60 can be updated or replaced as desired, or the indicia 60 may be accessed via the access port 160. Furthermore, the door 360 may be
5 configured with the locking mechanism so that access to the indicia 40 is restricted. Or alternatively, the indicia 60 may be inserted or removed from the indicia holder 40 via the access port 160, as previously discussed.

In yet another embodiment, the system 10 may be configured so that the housing 70 maintaining the actuator 200 is formed as a stand-alone unit 380, as shown in Fig. 5. In one
10 aspect, the stand-alone unit 380 may be configured so that it is operatively interfaced with the power source used to activate an automatic toilet or urinal 400, or other device. For example, the system 10 may be configured such that a power line 401 is coupled between the power source supplied at a flush actuator 412 maintained by the automatic toilet or urinal 400 and the controller 100 maintained by the system 10. As such, the system 10 may be energized directly
15 by the power used to power the automatic toilet or urinal 400, without the need of batteries or other portable power source 130. However, it should be appreciated that the stand-alone unit 380 may be powered by a portable power source, such as battery, or any other suitable power source, thus allowing the unit 380 to be placed in any desired position. Furthermore, the housing 70 of the standalone unit 380 comprises a pivoting door 402 that is attached to a
20 mounting section 404. The pivoting door 402 can be selectively opened to access the indicia holder 40, as well as the indicia 60 itself. Thus, in the event the indicia 60 is to be updated, the door 402 can be readily opened to enable the change of indicia 60. The mounting section 404 facilitates the mounting of the system 10 upon any desired surface or structure using suitable fasteners, such as screws or adhesive for example. In addition, the pivoting door 402 may
25 provide the access port 160, thus facilitating the removal and insertion of new indicia within the housing 70.

In another embodiment, as shown in Fig. 6, the system 10 may be configured whereby the housing 70 maintaining the system 10 comprises a spray mister 500. In one aspect, the spray mister 500 may be configured to dispense aerosolized material into the air to provide a
30 pleasant scent via a dispensing port 510. As such, the transitioning window 20 may be configured to transition from a substantially opaque state to a substantially transparent state

when an individual is within the proximity of the spray mister 500, as detected by the actuator 200. The spray mister 500 may also be configured such that the indicia 60 may be accessed through a pivoting door 520 or via the access port 160 disposed therein.

In addition, the system 10 may be configured whereby the actuator 200 is maintained
5 separately from the housing 70 and is remotely wired to the controller 100 of the standalone unit 380. For example, the actuator 200 may comprise a proximity sensor that is remotely maintained in a fixture 600, such as a faucet, as shown in Fig. 7, although the proximity sensor 200 may be maintained in any suitable fixture, structure, or surface. Thus, when an individual comes within proximity of the fixture 600, the transitioning window 20 is transitioned to a
10 substantially transparent state so as to display the indicia 60. Such a configuration allows the transitioning window 20 to be placed in one area, while the triggering action used to control the transitioning window 20 is sensed by the actuator 200 in another area. In another aspect, the system 10 can be configured to be retrofit with existing detection sensors, such as proximity sensors, that are maintained by an existing device. For example, in the case of hands-free
15 devices, such as hands-free faucets, the proximity sensor 200 may already be incorporated therein. As such, a user desiring to initiate or trigger the operation of the transitioning window 20 from the detection of a person's hands may couple the controller 100 to the proximity sensor 200 maintained by the faucet or other fixture 600 using any suitable communication interface.

In another aspect, it should be appreciated that the system 10 may be configured, such
20 that the controller 100 is programmed to include a timer, as shown in Fig. 8 of the drawings. As such, the controller 100 may be programmed to store a predetermined time interval, such as one second for example, although any other suitable time interval may be used. As such, the controller 100 is configured to place the transitioning window 20 into the substantially, or at least partially, opaque state for an amount of time equal to the time interval. Upon the
25 expiration of the time interval, the transitioning window is then placed into a substantially, or at least partially, transparent state for an amount of time equal to the time interval, thus selectively revealing the indicia 60. That is, the transitioning window is configured to periodically and continuously toggle or transition from its first state (substantially, or at least partially, opaque state) to its second state (substantially, or at least partially, transparent state), and vice versa,
30 after the expiration of the time interval. As result, the indicia 60 is periodically displayed and occluded so as to attract the attention of the user and others. In addition, such a sequence may

be repeated continuously, or may be terminated upon the occurrence of a predetermined event or after the expiration of a predetermined amount of time. It should also be appreciated that the system 10 may be configured such that the transitioning window 20 may be placed into either of the substantially, or at least partially, opaque state, or the substantially, or at least partially, transparent state for time intervals of different or unequal duration.

It should also be appreciated that the power source 130 coupled to the controller 100 may include a solar or photovoltaic cell that generates a suitable amount of power to allow the system 10 to operate. It is also contemplated that a rechargeable battery is coupled to the solar or photovoltaic cell, which is recharged during daylight hours. As such, during nighttime hours when the solar energy is unavailable, the system 10 may be powered by the rechargeable battery.

In one aspect, the housing 70 provided by the system 10 may comprise a portable dispenser housing that can be carried or removably attached to a user, such as by a clip for example. As such, the portable dispenser housing 70 includes a refill unit or vessel 320 that is filled with any suitable material, such as soap, sanitizer, moisturizer, or the like. The dispensing unit 310 may comprise a manually-actuated or automatic type of dispensing system that includes a suitable pump to dispense the material from the refill unit or vessel 320. For example, a manually-actuated dispensing unit 310 may include a manual push button or actuator that when depressed or otherwise actuated, actuates any suitable pump, such as a dome pump, to dispense the material to the user. Thus the system 10, as shown in Fig. 8, provides a convenient portable system for dispensing material while providing the periodic display of indicia 60, as controlled by the timer function of the controller 100, thus serving to attract the attention of the user, as well as others.

Furthermore, it should also be appreciated that the dispensing unit 310 may be coupled to the controller 100 to collect and monitor various hygiene compliance data associated with the operation of the dispensing unit 310. As such, the transitioning window 20 may transition from its first state (substantially, or at least partially, opaque state) to its second state (substantially, or at least partially, transparent state), and vice versa, when the hygiene compliance data meets one or more predetermined criteria that is programmed at the controller 100. For example, the transitioning window 20 may transition from the first state to the second state after a predetermined number of dispensing events have occurred at the dispensing unit

310. It should be appreciated that the transitioning window 20 may transition between its first and second states at any suitable interval or duration, and in any desired sequence.

It should also be appreciated that the system 10 may be configured such that the transitioning window 20 toggles or transitions from its first state (substantially, or at least partially, opaque state) to its second state (substantially, or at least partially, transparent state), and vice versa, upon the detection by the controller 100 of one or more operational status data conditions associated with the operation of the dispensers 300, 350, 380, 500; dispensing unit 310; or fixture 600 that meets predetermined criteria set at the controller 100. It should be appreciated that the transitioning window 20 may transition between its first and second states at any suitable interval or duration, and in any desired sequence. For example, such operational status data may include, but is not limited to, information indicating that that refill unit 320 is low or empty; that the battery power of the power source 130 is low; that service of the dispenser is needed; and the like. For example, the transitioning window 20 may transition from one state to another upon the detection that the dispensing unit 310 is inoperable.

It will, therefore, be appreciated that one advantage of one or more embodiments of the present invention is that a system for selectively revealing indicia provides a transitioning window that transitions from a substantially opaque state to a substantially transparent state to display indicia therethrough. Still another advantage of the present invention is that a system for selectively revealing indicia provides an actuator that, when actuated, results in the transitioning window transitioning from a substantially opaque state to a substantially transparent state. An additional advantage of the present invention is that a system for selectively revealing indicia provides an indicia holder that removably retains indicia so as to be shown to an observer through the transitioning window.

Although the present invention has been described in considerable detail with reference to certain embodiments, other embodiments are possible. Therefore, the spirit and scope of the appended claims should not be limited to the description of the embodiments contained herein.

CLAIMS

What is claimed is:

1. A system for selectively revealing indicia to an observer comprising:
 - 5 a housing having a transitioning window, wherein said transitioning window has substantially opposed receiving and viewing surfaces, and wherein said window is configured to transition between an at least partially transparent state and an at least partially opaque state;
 - a controller coupled to said transitioning window, said controller adapted to store a predetermined time interval; and
 - 10 an indicia holder carried by said housing and configured to support indicia so as to be in optical alignment with said receiving surface;
 - wherein said controller controls said transitioning window to periodically transition between said at least partially opaque state and said at least partially transparent state at said predetermined time interval, so as to allow the indicia to be periodically viewable via
 - 15 said viewing surface through said receiving surface.
2. The system of claim 1, wherein said indicia holder includes a ledge to support the indicia thereon.
- 20 3. The system of claim 1, wherein said transitioning window is formed from a material selected from the group consisting of polymer dispersed liquid crystal (PDLC) material, suspended particle device (SPD) material, and electrochromic material.
4. The system of claim 1, wherein said indicia holder, said controller, and said transitioning window are at least partially maintained by a housing.
- 25 5. The system of claim 4, further comprising:
 - a dispensing unit carried by said housing, said dispensing unit including an actuator; and
 - 30 a refill unit adapted to carry at least one dispensing item in operative communication with said dispensing unit,

whereupon the actuation of said actuator results in the dispensing of said at least one dispensing item from said dispensing unit.

5 6. The system of claim 4, wherein said housing includes an access port that is in operative communication with said indicia holder to enable the removal and receipt of the indicia therefrom.

7. The system of claim 1, further comprising a light source coupled to said controller, said light source generating a light to illuminate the indicia.

10 8. The system of claim 1, wherein said time interval comprises a first time interval associated with said at least partially opaque state and a second time interval associated with said at least partially transparent state, wherein the duration of said first and second time intervals are different.

15 9. A system for dispensing material from a refill unit carrying at least one dispensing item comprising:

20 a housing having a transitioning window, wherein said transitioning window has substantially opposed receiving and viewing surfaces, and wherein said window is configured to transition between an at least partially transparent state and an at least partially opaque state;

a controller coupled to said transitioning window and said dispensing unit, said controller detecting at least one operational parameter associated with said dispensing unit;

25 a dispensing unit carried by said housing and adapted to be fluidly coupled to the refill unit, wherein upon the actuation of said dispensing unit, the at least one dispensing item is dispensed; and

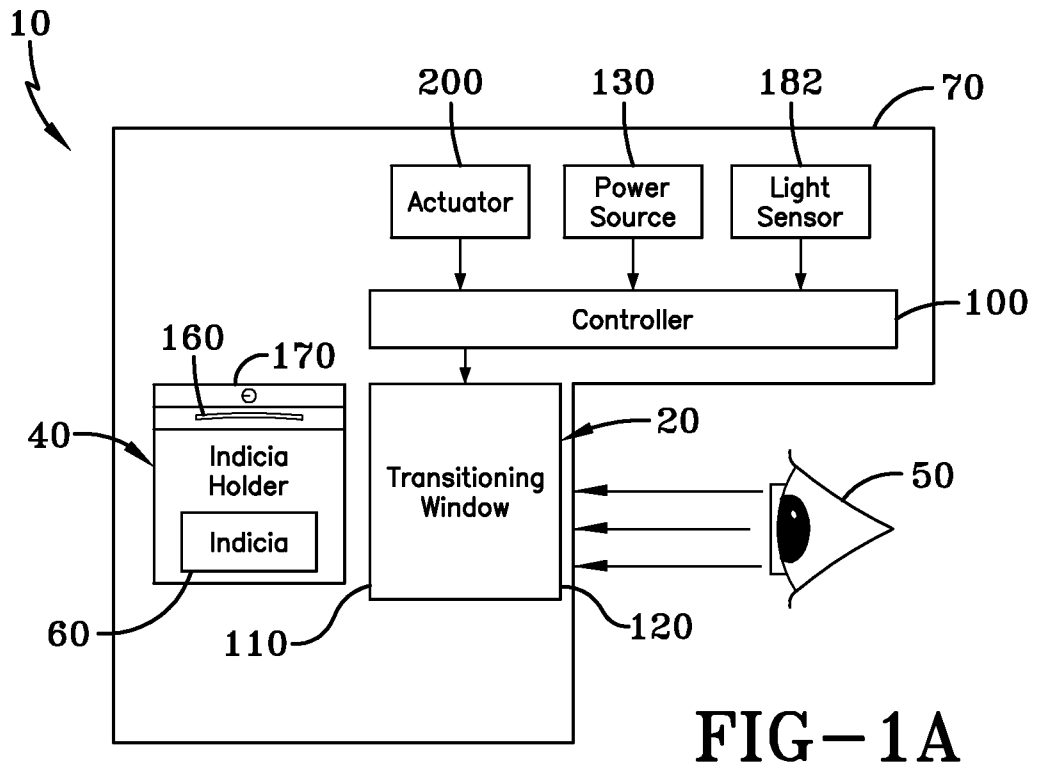
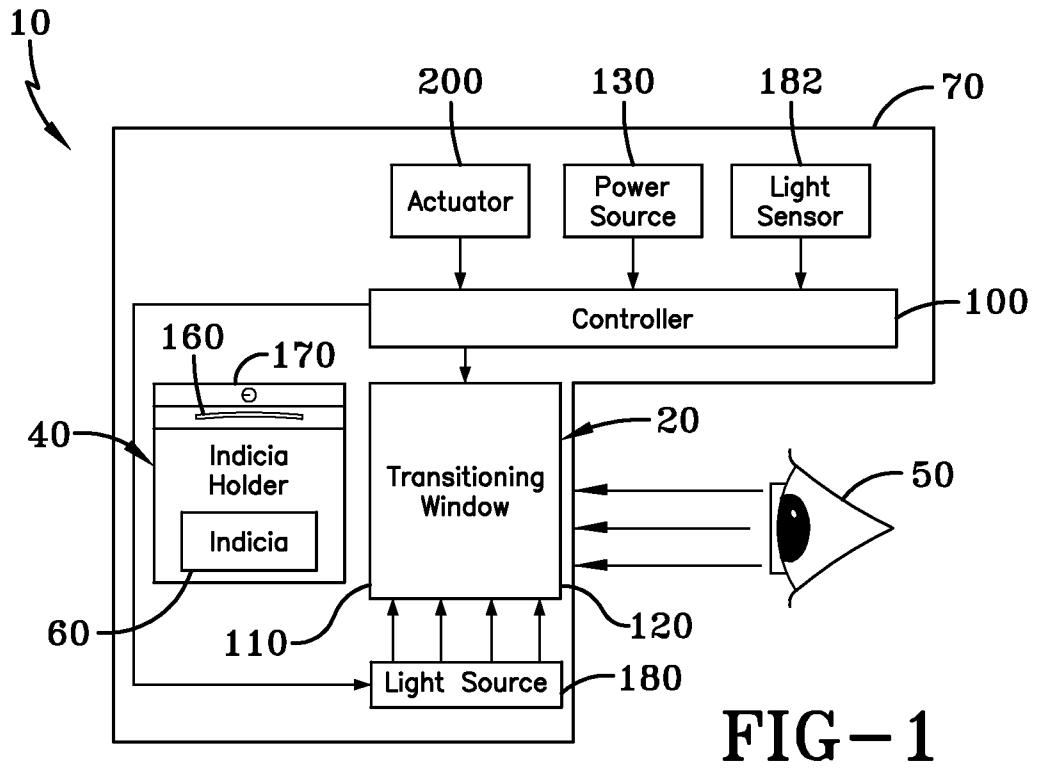
an indicia holder carried by said housing and configured to support indicia so as to be in optical alignment with said receiving surface;

30 wherein when said operational parameter meets predetermined criteria, said transitioning window transitions from said at least partially opaque state to said at least

partially transparent state, so as to allow the indicia to be viewable via said viewing surface through said receiving surface.

- 5 10. The system of claim 9, wherein said indicia holder includes a ledge to support the indicia thereon.
11. The system of claim 9, wherein said transitioning window is formed from a material selected from the group consisting of polymer dispersed liquid crystal (PDLC) material, suspended particle device (SPD) material, and electrochromic material.
- 10 12. The system of claim 9, wherein said housing includes an access port that is in operative communication with said indicia holder to enable the removal and receipt of the indicia therefrom.
- 15 13. The system of claim 9, further comprising a light source coupled to said controller, said light source generating a light to illuminate the indicia.
14. A system for selectively revealing indicia to an observer comprising:
a housing having a transitioning window, wherein said transitioning window has
20 substantially opposed receiving and viewing surfaces, and wherein said window is configured to transition between an at least partially transparent state and an at least partially opaque state;
a controller coupled to said transitioning window;
a sensor coupled to said controller to detect an input; and
25 an indicia holder carried by said housing and configured to support indicia so as to be in optical alignment with said receiving surface;
wherein upon the detection of the input by said sensor, said transitioning window transitions from said at least partially opaque state to said at least partially transparent state, so as to allow the indicia to be viewable via said viewing surface through said
30 receiving surface.

15. The system of claim 14, wherein said indicia holder includes a ledge to support the indicia thereon.
- 5 16. The system of claim 14, wherein said transitioning window is formed from a material selected from the group consisting of polymer dispersed liquid crystal (PDLC) material, suspended particle device (SPD) material, and electrochromic material.
- 10 17. The system of claim 14, wherein said indicia holder, said controller, and said transitioning window are at least partially maintained by a housing.
18. The system of claim 17, further comprising:
a dispensing unit carried by said housing, said dispensing unit including an actuator;
and
a refill unit adapted to carry at least one dispensing item in operative
15 communication with said dispensing unit,
whereupon the actuation of said actuator results in the dispensing of said at least one dispensing item from said dispensing unit.
- 20 19. The system of claim 17, wherein said housing includes an access port that is in operative communication with said indicia holder to enable the removal and receipt of the indicia therefrom.
- 25 20. The system of claim 14, further comprising a light source coupled to said controller, said light source generating a light to illuminate the indicia.



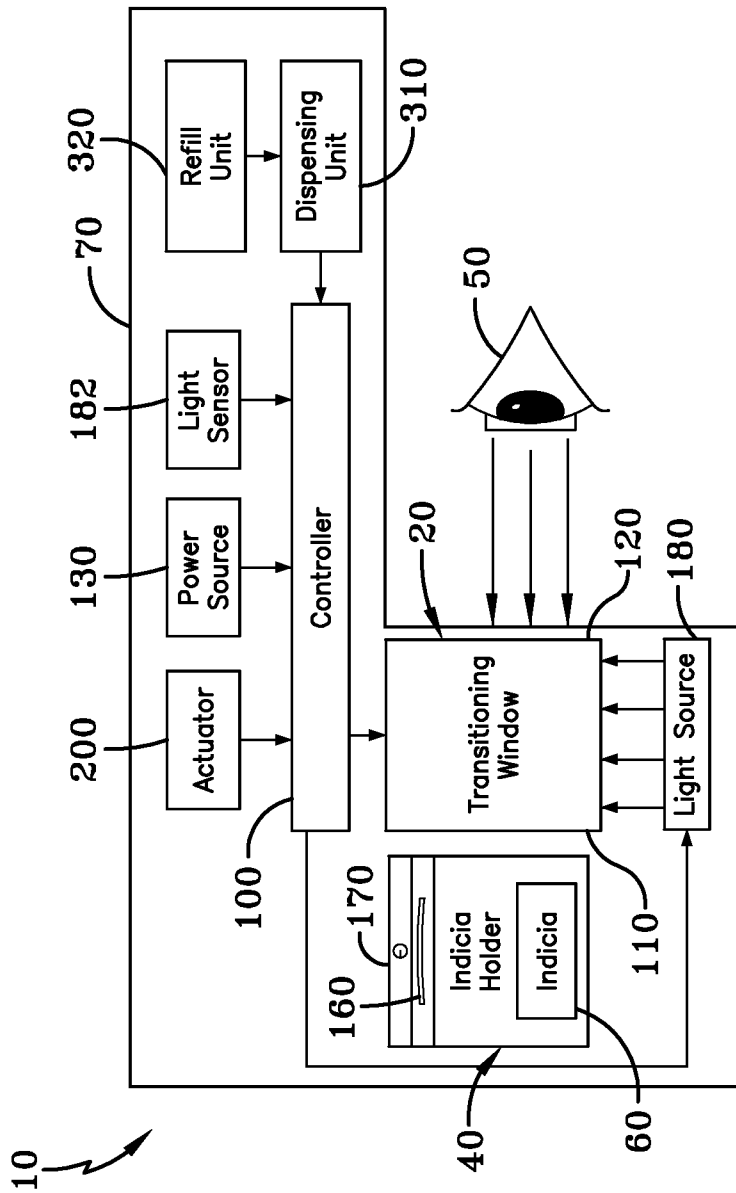


FIG-2

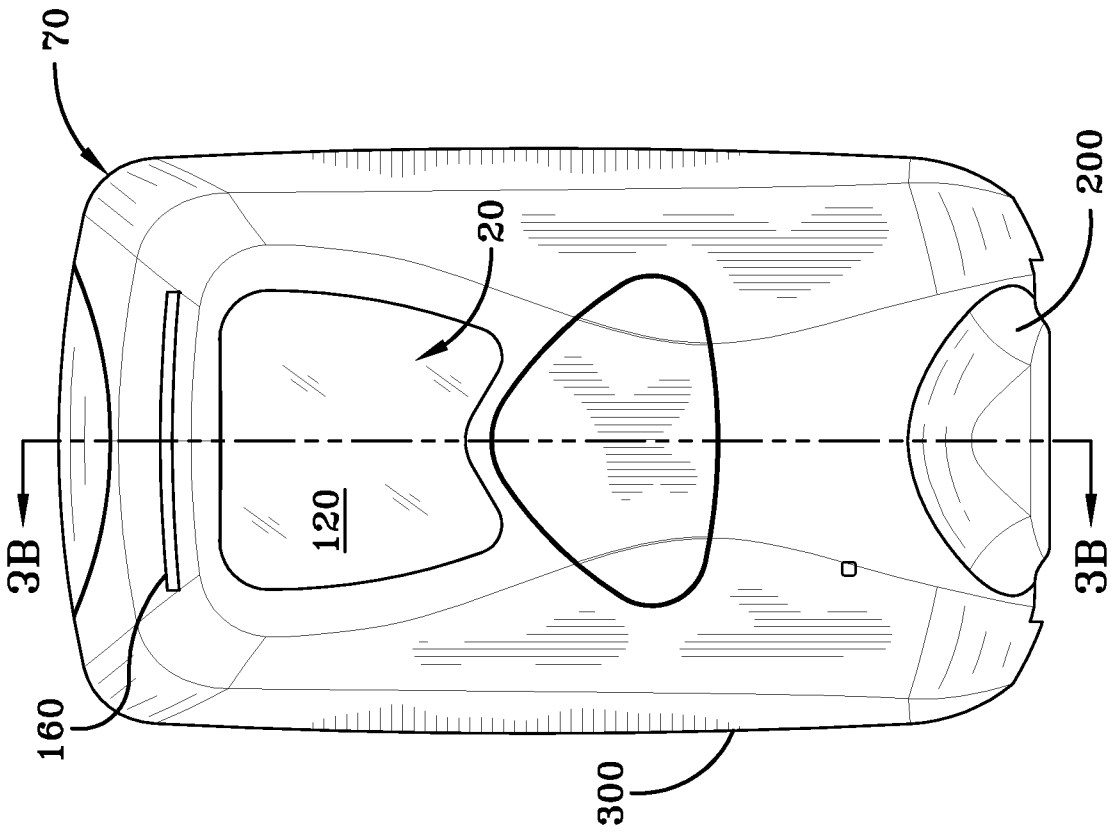


FIG-3A

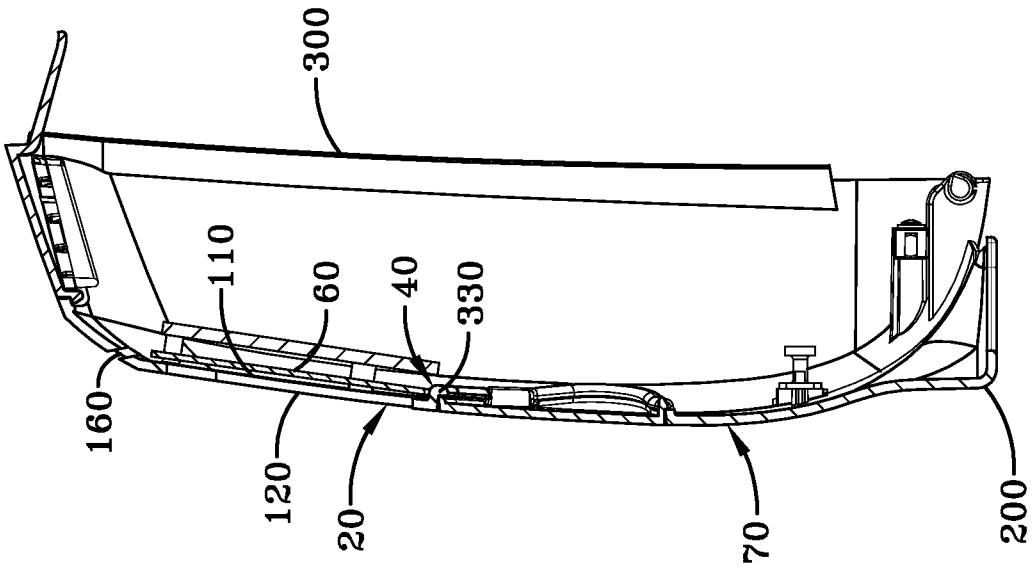


FIG-3B

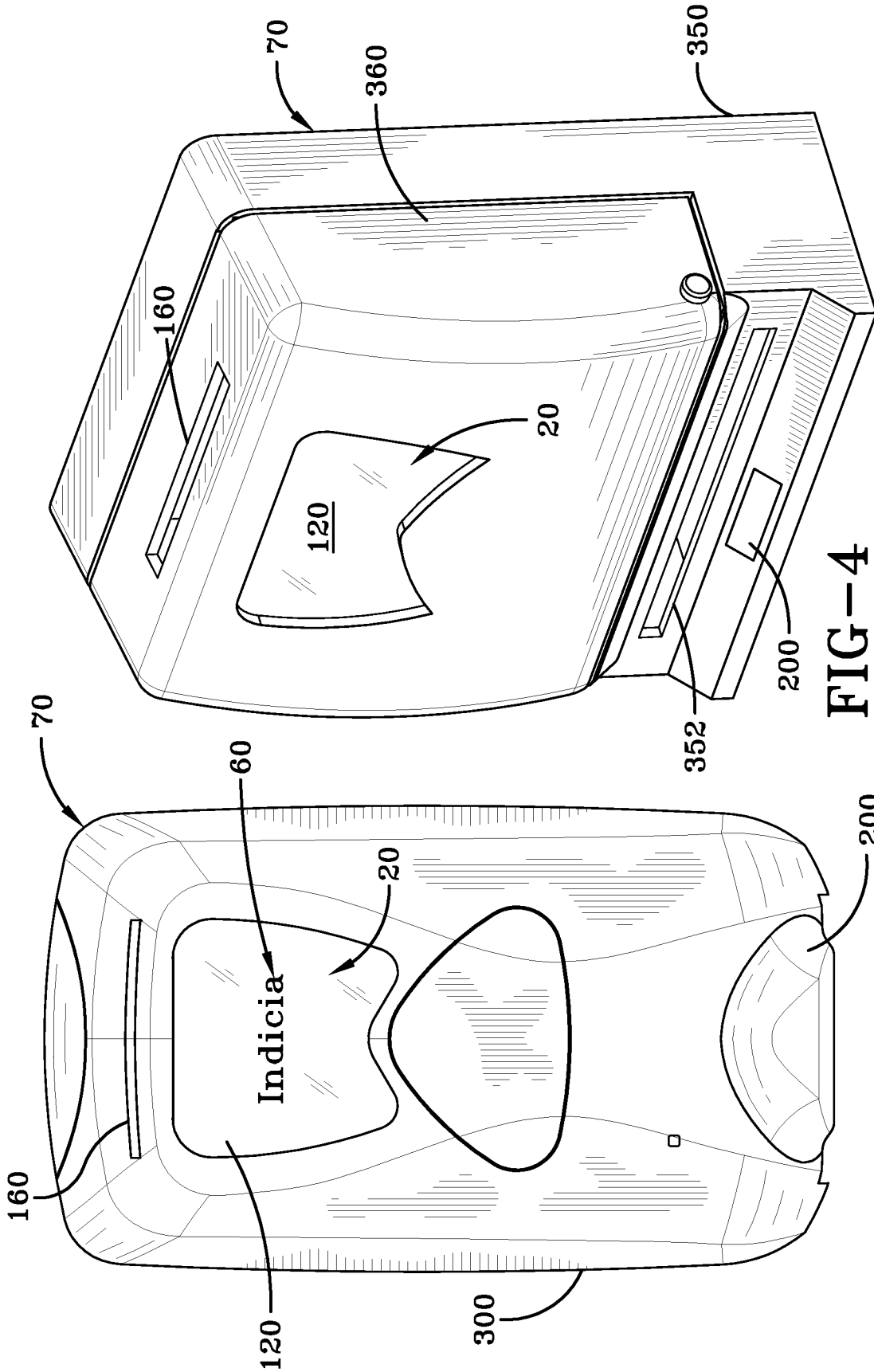
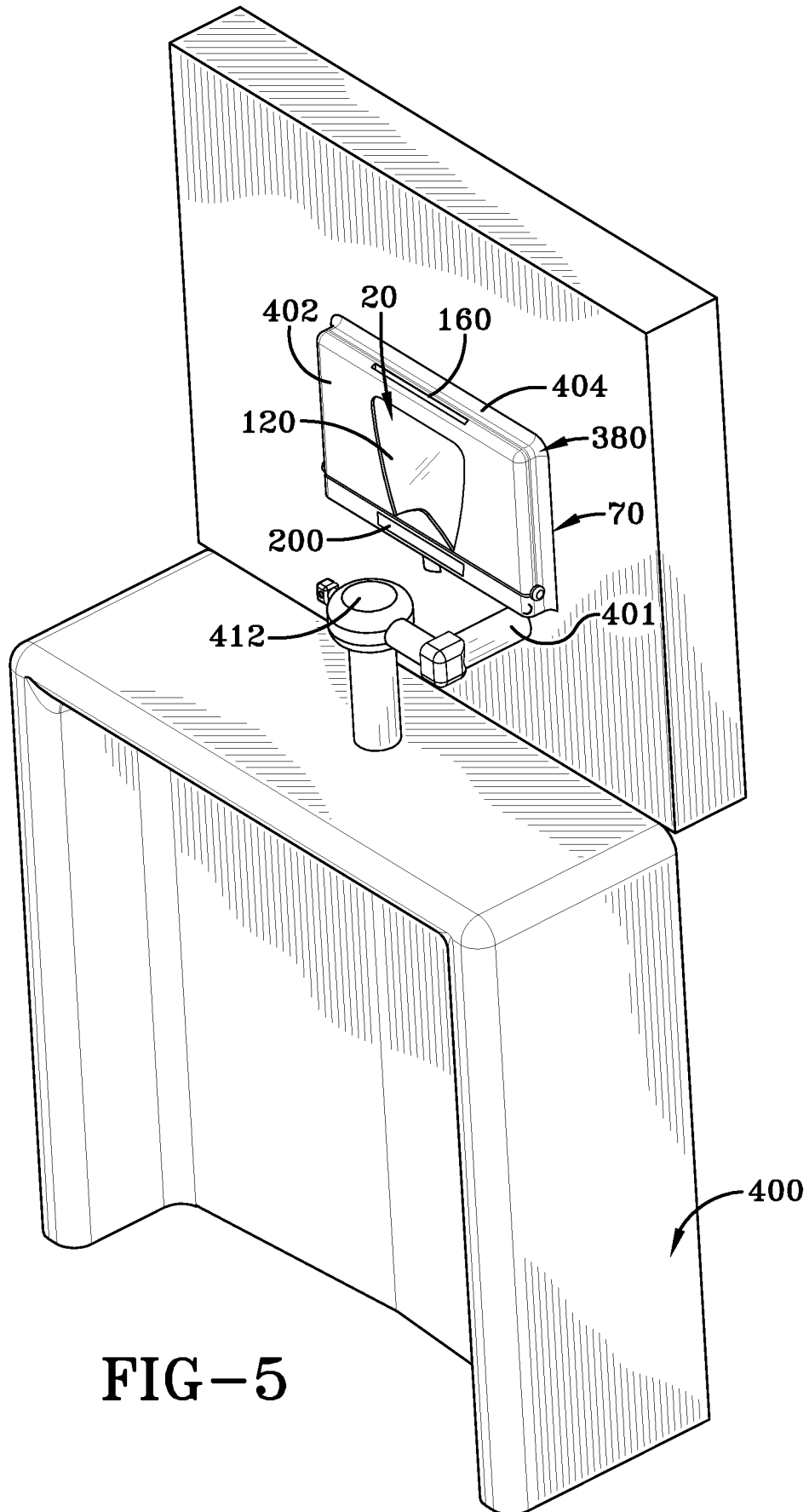


FIG-4

FIG-3C

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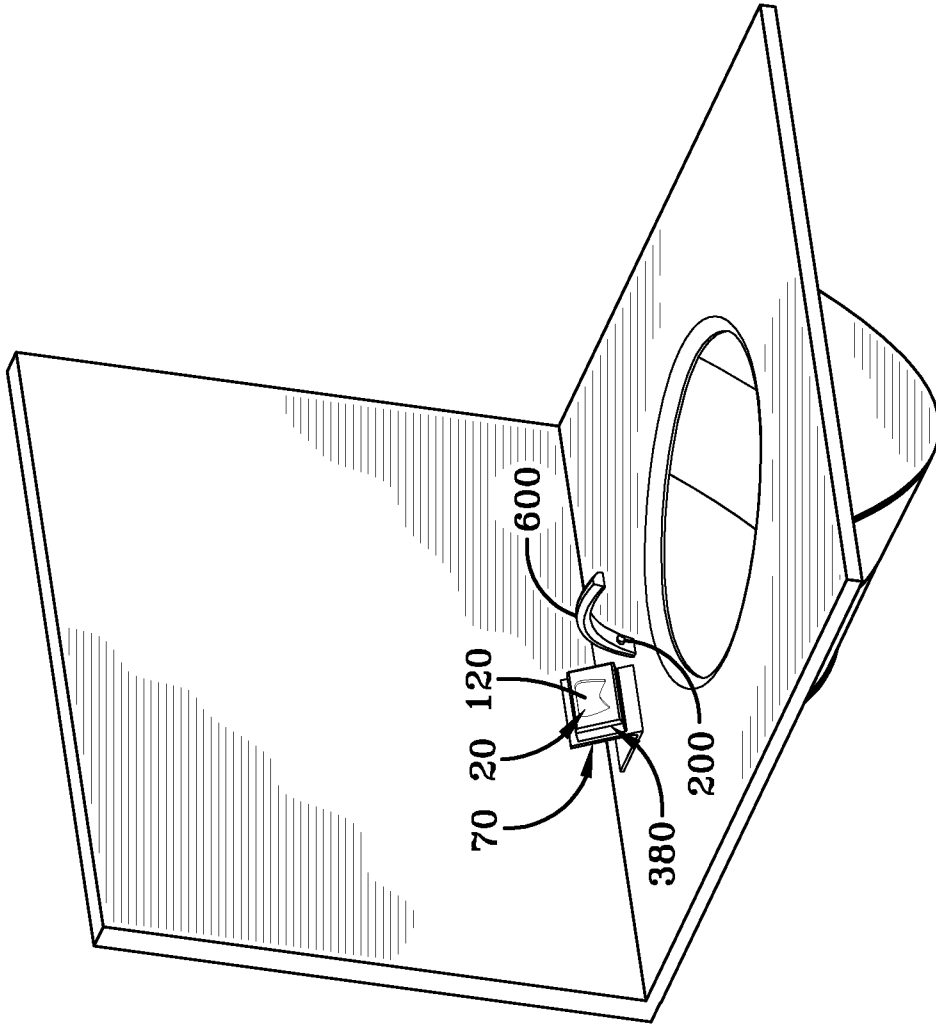


FIG--7

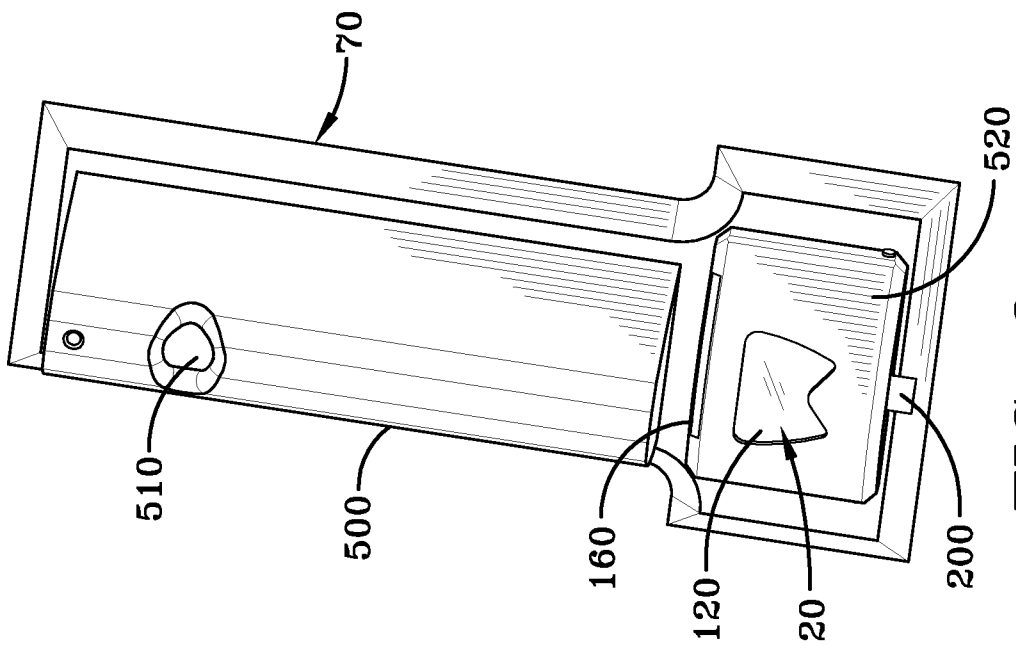


FIG-6

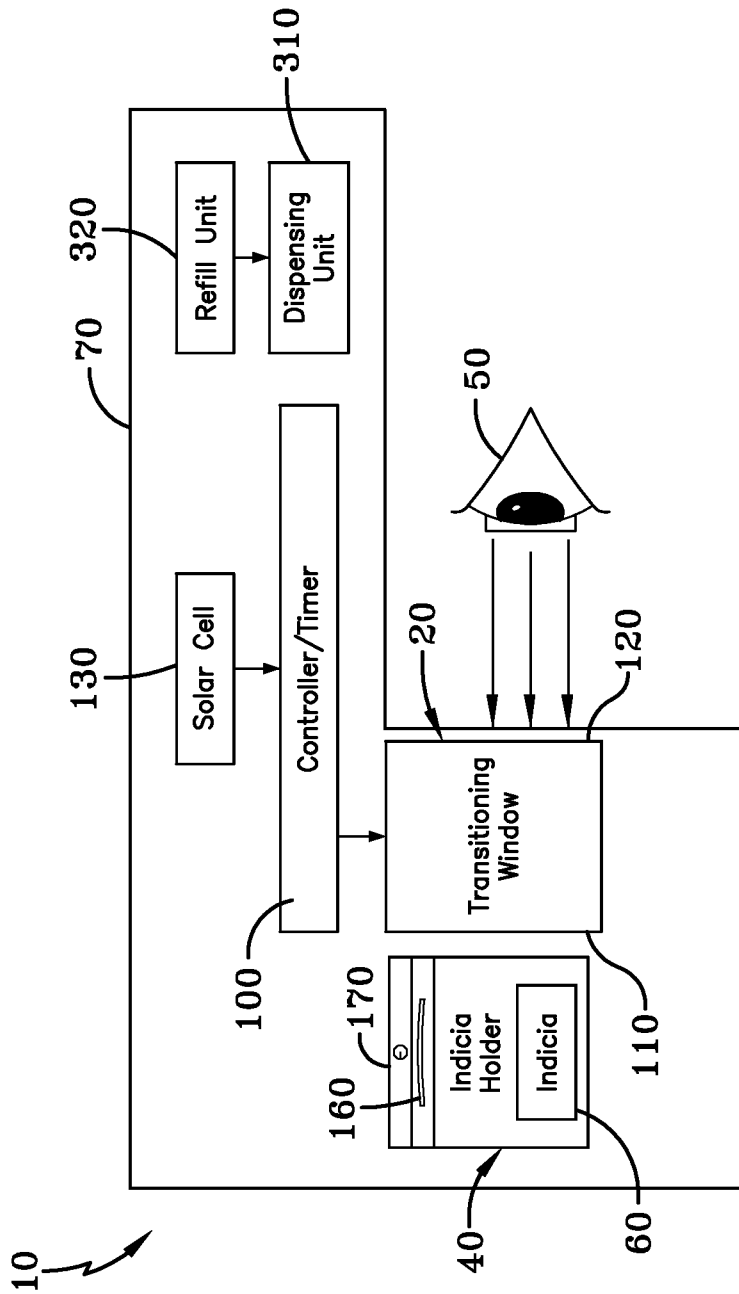


FIG-8

INTERNATIONAL SEARCH REPORT

International application No
PCT/US2013/049670

A. CLASSIFICATION OF SUBJECT MATTER
INV. G09F23/02
ADD.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
G09F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

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X	EP 2 164 060 A2 (GOJO IND INC [US]) 17 March 2010 (2010-03-17) the whole document	1-20
A	US 2008/244940 A1 (MESIKA YIGAL [US]) 9 October 2008 (2008-10-09) the whole document	1-8
A	US 5 153 760 A (AHMED ADEL A A [US]) 6 October 1992 (1992-10-06) the whole document	1-8
A	US 2010/011637 A1 (ZHANG YUDONG [US]) 21 January 2010 (2010-01-21) the whole document	1-8
A	FR 2 766 278 A1 (WERQUIN GILBERT [FR]) 22 January 1999 (1999-01-22) the whole document	1-8

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See patent family annex.

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Date of the actual completion of the international search 9 December 2013	Date of mailing of the international search report 16/12/2013
Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Demoor, Kristoffel

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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