



(22) Date de dépôt/Filing Date: 2009/08/11

(41) Mise à la disp. pub./Open to Public Insp.: 2009/10/26

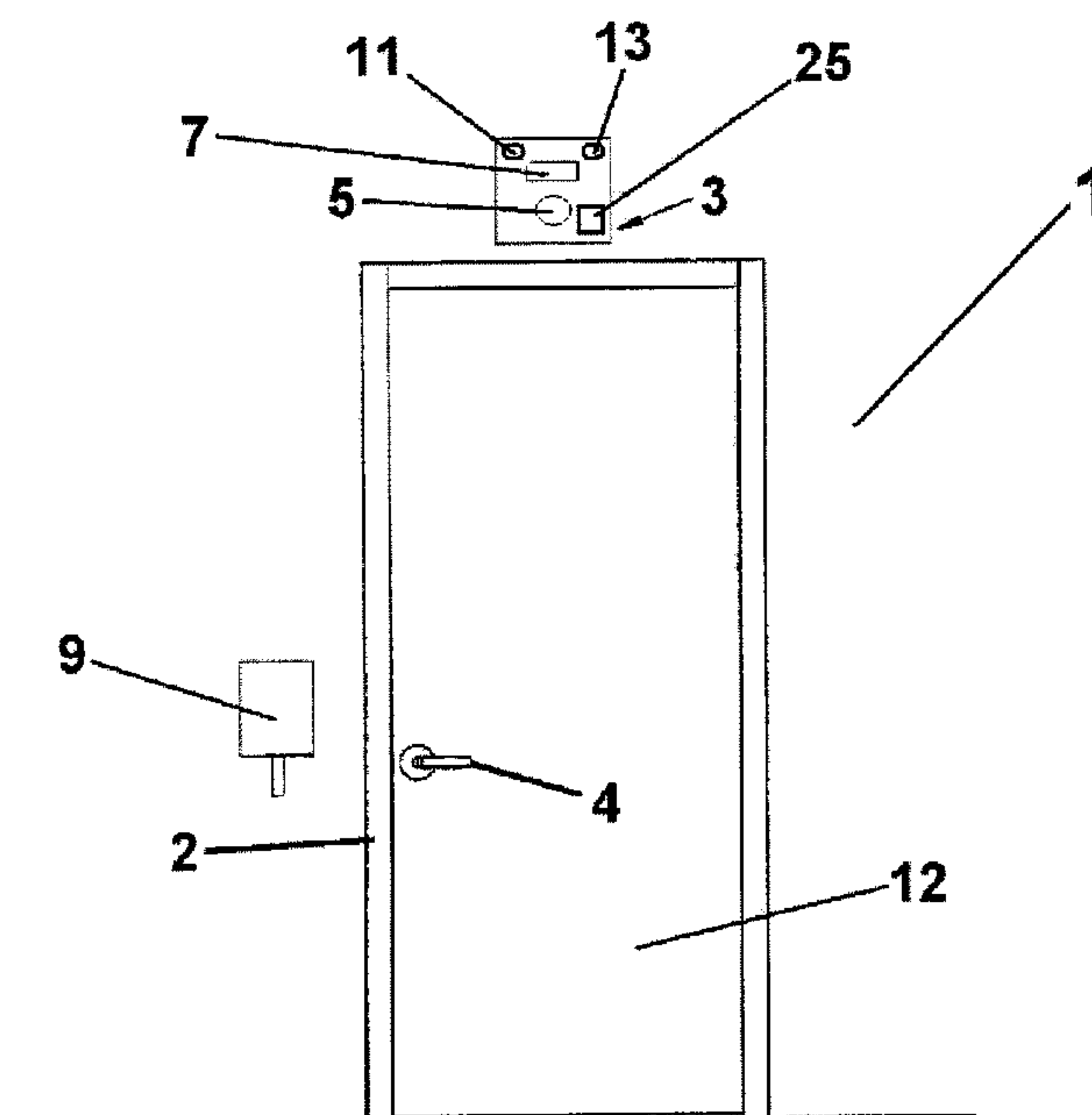
(51) Cl.Int./Int.Cl. *E05B 47/00* (2006.01),
A61G 12/00 (2006.01), *G07C 9/00* (2006.01)

(71) Demandeur/Applicant:
BROW, GEORGES RAYMOND, CA

(72) Inventeur/Inventor:
BROW, GEORGES RAYMOND, CA

(54) Titre : SYSTÈME DE DESINFECTION DES MAINS COMMANDANT L'OUVERTURE D'UNE PORTE

(54) Title: DOOR CONTROLLING HAND DISINFECTANT SYSTEM



(57) Abrégé/Abstract:

The present invention relates to an improved automated door controlling hand disinfectant system by which a visitor must first utilize a disinfectant/soap dispenser to gain unalarmed entry or exit through a door. When the dispenser is utilized the dispenser transmits a signal to a processor which then deactivates temporarily a motion/presence detector scanning an area immediately adjacent or close to the doorway, and unlocks the door to permit entry. At the same time, a processor activates a light emitter to provide a visual indication to the visitor that passage is permitted, and, simultaneously also activates an access allowed audio tone to be played through a message conveying apparatus. If the dispenser has not been utilized, the system will retain the door in a locked position to prevent passage through the door until hand washing has occurred, and the motion/presence detector will remain armed and the processor then issues an access denied audio tone to be played, and, simultaneously also activates a flashing light emitter to provide a visual indication to the visitor that passage is not permitted. In an alternative variation, the components of the system are self-contained within the door and the door is web enabled with electronic communication, whereby settings and events for the door can be observed or changed manually on site or remotely such as via the internet by a remote operator.



5

Abstract

The present invention relates to an improved automated door controlling hand disinfectant system by which a visitor must first utilize a disinfectant/soap dispenser to gain unalarmed entry or exit through a door. When the dispenser is utilized the dispenser transmits a signal to a processor which then deactivates temporarily a motion/presence detector scanning an area immediately adjacent or close to the doorway, and unlocks the door to permit entry. At the same time, a processor activates a light emitter to provide a visual indication to the visitor that passage is permitted, and, simultaneously also activates an access allowed audio tone to be played through a message conveying apparatus. If the dispenser has not been utilized, the system will retain the door in a locked position to prevent passage through the door until hand washing has occurred, and the motion/presence detector will remain armed and the processor then issues an access denied audio tone to be played, and, simultaneously also activates a flashing light emitter to provide a visual indication to the visitor that passage is not permitted. In an alternative variation, the components of the system are self-contained within the door and the door is web enabled with electronic communication, whereby settings and events for the door can be observed or changed manually on site or remotely such as via the internet by a remote operator.

25

30

35

DOOR CONTROLLING HAND DISINFECTANT SYSTEM

FIELD OF THE INVENTION

5 The present invention relates generally to an automated door controlling hand disinfectant system, and, more particularly, to an automated door controlling hand disinfectant system that reminds and forces a person to wash/disinfect their hands before permitting entry to or exit from such a facility, thereby reducing the spread of germs and contagions.

DESCRIPTION OF THE PRIOR ART

10 Many diseases, such as hepatitis, have been found to be transmittable due to a failure of people to wash their hands. In fact, certain public health laws require those in, for example, the food distribution field to wash their hands each time they exit these facilities before they resume their
15 duties. In areas such as hospitals or labs, the spread of germs and contagions is a serious health concern. For this reason, many such facilities post visual signs which are intended to remind a person to wash their hands before entry/exit, but such signs can be easily ignored, and thus stronger warning systems are required if such spread of disease is to be checked or inhibited. While signs may be innocuous means of warning the public of the need to wash their hands, with a view to reducing the
20 spread of germs and contagions, stronger warning means that provide audible or visual alerts should be used in certain public facilities to provide these reminders, such as for employees of a restaurant, hospitals, food processing or research facilities, or the like.

 Accordingly, there is need for an automated door controlling hand disinfectant system that
25 utilizes a soap/disinfectant dispenser, and which can provide audible or visual alerts for use in a facility, such as restaurants, hospitals, food processing or research facilities, or the like, such as on any building that features an automatic/ electric door opener or door held shut with a magnetic lock or similar locking device, for ensuring that persons entering or leaving such a facility must disinfect their hands. There is also a need for an automated door controlling hand disinfectant system that only
30 permits entry/exit into these facilities once the soap/disinfectant dispenser has been activated, with a view to reducing the spread of germs and contagions. To this end, the present invention effectively addresses this need.

5

SUMMARY OF THE INVENTION

10 A general object and advantage of the present invention is to provide an improved automated door controlling hand disinfectant system that utilizes a soap/disinfectant dispenser, and which can provide audible or visual alerts for use in a facility, such as restaurants, hospitals, food processing or research facilities, or the like, or any building that features an automatic/ electric door opener or door held shut with a magnetic lock or similar locking device, for ensuring that persons entering or leaving such a facility must disinfect their hands.

15 A still further object and advantage of the present invention is to provide an improved automated door controlling hand disinfectant system that only permits unalarmed entry/exit into these facilities once the soap/disinfectant dispenser has been activated and utilized, with a view to reducing the spread of germs and contagions.

20 A still further object and advantage of the present invention is to provide an improved automated door controlling hand disinfectant system that issues an audio message when the supply of soap/disinfectant in the soap/disinfectant dispenser is running low, or when when a battery powered power source is utilized and power is low.

25 According to one aspect of the present invention, there is provided an automated door controlling hand disinfectant system for controlling access through a doorway comprising a housing being mounted near to a doorway; a motion/presence detector being mounted on the housing and being adapted for detecting an approach of a visitor to the doorway; a door lock mechanism for locking and unlocking a door permitting entry or exit through the doorway; a processor being
30 mounted in the housing and being electrically coupled to the motion/presence detector; and message conveying means being mounted on the housing and being electrically coupled to the processor; product dispensing means having at least one product dispensing signal emitter integrated therewith

5 in electronic communication with the microprocessor; wherein when the product dispensing means are utilized, the at least one product dispensing signal emitter transmits a signal to the microprocessor, whereupon, the microprocessor transmits an unlocking signal to the door lock mechanism to unlock the door to permit entry or exit by the user.

10 According to another aspect of the present invention, there is provided an automated door controlling hand disinfectant system comprising a housing being mounted proximate a doorway; a motion/presence detector being mounted on the housing and being adapted for detecting an approach of a visitor to the doorway; a door lock mechanism for locking and unlocking a door permitting entry or exit through the doorway; a processor being mounted in the housing and being electrically coupled
15 to the motion/presence detector; message conveying means being mounted on the housing and being electrically coupled to the processor; product dispensing means having at least one product dispensing signal emitter integrated therewith in electronic communication with the microprocessor; a power source constructed and arranged for connection to components of the system; and a data storage device mounted in the housing and being electrically coupled to the processor, and providing
20 an access allowed audio tone when a person has utilized the product dispensing means and issuing an access denied audio tone when a person has not utilized the product dispensing means, said processor being adapted for playing either the access allowed audio tone or the access denied audio tone on the message conveying means instantaneously, and wherein when the product dispensing means are utilized, the at least one product dispensing signal emitter transmits a signal to the
25 microprocessor, whereupon, the microprocessor transmits an unlocking signal to the door lock mechanism to unlock the door to permit entry or exit by the user.

According to another aspect of the present invention, there is provided an automated door controlling hand disinfectant system comprising a motion/presence detector adapted for detecting
30 an approach of a visitor to a doorway; a self-contained door constructed and arranged for integration with the doorway comprising thereon: (a) a microprocessor, the microprocessor being in electronic communication with the motion/presence detector; (b) message conveying means in electronic

5 communication with the microprocessor for providing an audio/visual reminder to the visitor to wash
their hands before entering or exiting through the doorway; (c) a data storage device in electronic
communication with the microprocessor for recordal of low supply warnings/low battery warnings,
settings and events for the door; (d) a web enabled circuit in electronic communication with the data
10 storage device and internet, whereby the low supply warnings/low battery warnings, settings and
events for the door can be retrieved from the data storage device and observed or changed on site or
via the internet by a remote attendant; (e) a door lock mechanism for locking and unlocking the door
and permitting entry or exit through the doorway; and product dispensing means having at least one
product dispensing signal emitter integrated therewith in electronic communication with the
15 microprocessor; wherein when the product dispensing means are utilized, the at least one product
dispensing signal emitter transmits a signal to the microprocessor, whereupon, the microprocessor
transmits an unlocking signal to the door lock mechanism to unlock the door to permit entry or exit
by the visitor.

BRIEF DESCRIPTION OF THE DRAWINGS

20

A preferred embodiment of the present invention is described below with reference to the
accompanying drawings, in which:

25

Figure 1 illustrates a front view of the automated door controlling hand disinfectant system
of the present invention;

Figure 2 illustrates the housing of the automated door controlling hand disinfectant system
of the present invention; and

30

Figure 3 illustrates an alternative embodiment of the automated door controlling hand
disinfectant system of the present invention.

5

DESCRIPTION OF THE PREFERRED EMBODIMENT

10 The present invention relates to an automated door controlling hand disinfectant system, whereby a door will not be unlocked to to permit entry until a soap/disinfectant dispenser has dispensed a pre-set amount of disinfectant. If the soap/disinfectant dispenser is not utilized, the door shall remain shut, restricting passage until the soap/disinfectant dispenser is used. With reference now to the drawings, and in particular to **Figures 1 and 2**, the automated door controlling hand disinfectant system of the present invention, generally designated by the reference numeral **1**, will now be described. In one embodiment, the system of the present invention can be electrically coupled to a
15 primary power supply (not shown), preferably by hardwiring an electrical supply to components of the system. In an alternative embodiment an alternate power source, such as, for example, a battery source or through electrical wiring, or through other means, could also be utilized as would be apparent to one skilled in the art.

20 The automated door controlling hand disinfectant system **1** generally comprises a housing **3** that is mounted proximate to a door **12** of an entranceway (or doorway) **2** to a facility, such as restaurants, hospitals, food processing or research facilities, or the like. In the preferred embodiment, the housing **3** is mounted on a wall above the entranceway **2**, though it will be readily understood that variations as to the placement of the housing **3** are possible, as would be readily understood by one
25 skilled in the art. For example, the housing **3** could be placed adjacent the door **12** of the entranceway **2**, or mounted on another component in close proximity thereto.

A motion/presence detector **5** is mounted on the housing **3** and is adapted for detecting an approach of a visitor to the door **12** of the entranceway **2**, it being understood that the
30 motion/presence detector **5** can be conventional in nature, and can also be a proximity detector. In

5 a preferred embodiment, a processor 7 is housed within (or on) the housing 3 it being understood that the processor 7 is electrically coupled to other components of the system, as hereinafter described. It will, of course, be understood that the location of the processor 7 or the motion/presence detector 5 could be varied, as would be apparent to one skilled in the art. In an alternative embodiment, the processor 7 can be housed in, or around the proximity of, the door 12 of the entranceway 2, but
10 alternatively may be located in a nearby location, or at a remote location from the door 12 or the entranceway 2.

A data storage device (not shown) is mounted in the housing 3, and preferably has recorded thereon a message indicating warnings such as a low supply warnings received from soap/disinfectant
15 dispenser 9, it being understood that variations to the type of information collected and stored by the data storage device are possible. Examples of such information that could be collected and stored in the data storage device could include number of people entering and exiting the building, the number of people and/or percentage of people who used the soap/disinfectant dispenser 9, and malfunction alerts. In an alternative embodiment, the data storage device can also store a “low
20 battery” warning, that can be issued through the message conveying apparatus 25, when a battery powered power source is utilized and power is low.

It will be understood that the message conveying apparatus 25 is arranged to be mounted near to (or upon) any of the soap/disinfectant dispenser 9, door 12 or entranceway 2. It will also be
25 understood that soap/disinfectant dispenser 9 is, preferably, arranged to be mounted on the outside or inside of a building, near an exterior doorway, or located inside the building’s vestibule, and that a second, or indeed a plurality of soap/disinfectant dispensers may be utilized to compel hand sanitization prior to exit or entry.

5 In operation, when approaching the door 12 of the entranceway 2 to a facility, in a preferred embodiment, the visitor must first utilize soap/disinfectant dispenser 9 to gain unalarmed entry to or exit from the facility through the door 12 of the entranceway 2, it being understood that the door 12 is normally in a locked position, the door being kept in a locked position by a door lock mechanism (not shown), such as a magnetic lock or other similar device, for locking and unlocking the door 12
10 permitting entry or exit. When the soap/disinfectant dispenser 9 is utilized by the visitor before approaching the door 12 to the entranceway 2, the signal emitter (not shown) from the soap/disinfectant dispenser 9 transmits a signal to a processor 7, which then deactivates temporarily the motion/presence detector 5 scanning an area immediately adjacent or close to the door 12 and the entranceway 2. At the same time, the soap/disinfectant dispenser 9 transmits a signal to the processor
15 7, whereupon the processor 7 will issue an unlocking signal to the door lock mechanism of the door 12 to unlock the door to permit entry or exit for the visitor. At the same time, processor 7 simultaneously activates access allowed emitter 11 to provide a visual indication to the visitor that passage is permitted, and, simultaneously also activates the access allowed audio tone to be played through message conveying apparatus 25.

20 However, it will be understood that if the soap/disinfectant dispenser 9 has not been utilized, and no signal from the soap/disinfectant dispenser 9 has been transmitted to the processor 7, it is to be understood that the processor 7 will only issue the unlocking signal to the door lock mechanism of the door 12 to unlock the door if a signal has been received from the soap/disinfectant dispenser
25 9. In this scenario, if the visitor approaches the door 12 to the entranceway 2 without utilizing the soap/disinfectant dispenser 9, the processor 7 will retain the door lock mechanism of the door 12 in a locked position to prevent passage through the door 12 until hand washing has occurred, and the processor 7 then issues the access denied audio tone to be played through message conveying apparatus 25, and, simultaneously also activates the access denied emitter 13 to provide a visual
30 indication to the visitor that passage is not permitted. In one embodiment, the visual indication that is given to the visitor to indicate that passage is permitted can be a “green” light, and the visual

5 indication that is given to the visitor to indicate that passage is not permitted is a “red light”, though it will, of course, be understood that numerous variations as to this can be effected.

10 To gain entry, as noted above, the visitor utilizes the soap/disinfectant dispenser 9 before approaching the door 12 to the entranceway 2, and the signal emitter (not shown) from the soap/disinfectant dispenser 9 transmits a signal to a processor 7, which then deactivates temporarily the motion/presence detector 5 scanning an area immediately adjacent or close to the door 12 to the entranceway 2, and thus permits entry or exit for the visitor. At the same time, processor 7 activates access allowed emitter 11 to provide a visual indication to the visitor that passage is permitted, and, simultaneously also activates the access allowed audio tone to be played through message conveying apparatus 25. As seen in **Figure 1**, the visitor could utilize handle 4 on the door to gain entry or exit.

20 It will be appreciated by those skilled in the art that the processor 7 is, preferably, in electronic radio communication with the soap/disinfectant dispenser 9 and other components of the system through electro magnetic signals, or a combination thereof, as is conventionally known. It will also be appreciated by those skilled in the art that the electro magnetic signals can include infra-red, RF, or any other electro magnetic signal, as are well known in the art. Alternatively, the connection between these components could also be hard wired. Preferably the soap/disinfectant dispenser 9 is mounted near or proximate to the entranceway 2, though it will be understood that variations to the positioning of this are possible.

25 In a further embodiment, the processor 7 may also issue an audible message to individuals who are attempting to enter (or exit) the door 12 to the entranceway 2, and who have not utilized the soap/disinfectant dispenser 9, through the playing of a recorded audio message or reminder (such as, “*Soap and Rinse your hands*” or “*please sanitize your hands to gain entry to this building*”) through the message conveying apparatus 25, it being understood that variations as to the type of message

5 conveyed are possible. In this embodiment, the audible message is activated when the visitor has attempted to gain entry/exit by passing through the door 12 to the entranceway 2, and the processor 7 recognizes that no signal from the soap/disinfectant dispenser 9 has been transmitted to the processor 7, at which point the processor 7 issues a signal to the message conveying apparatus 25 to issue the recorded access denied audio tone to the visitor. It will, of course, be understood that
10 multiple such reminders could be effected, if the processor is so programmed.

It will also be understood that such reminder messages can also be conveyed in the form of a visual reminder, such as through use of an LED sign (not shown), or other types of sounds that are emitted for the user to hear, it being understood that variations to these conveyed messages are
15 possible, such as MP3's for example.

In a still further embodiment, when supplies are low in the soap/disinfectant dispenser 9, the signal emitter (not shown) from the soap/disinfectant dispenser 9 transmits a signal to the processor 7 to activate the low supply (or low soap) warning to be played or conveyed (either through an audio
20 of visual reminder) through message conveying apparatus 25. In much the same manner, when battery power for the system is low, the processor 7 activates the low battery warning to be played through message conveying apparatus 25 when this occurs.

In a still further embodiment, an electronic counter and/or electric eye (not shown) component
25 could be utilized to physically count the number of people entering/exiting the building versus the number of signals received by the processor 7 from soap/disinfectant dispenser 9. If, for example, three people are counted by the electronic counter and/or electric eye but the processor 7 has noted that only two people have utilized soap/disinfectant dispenser 9, then an alarm could sound, and/or the playing of a recorded audio message or reminder (such as, "*Soap and Rinse your hands*" or
30 "*please sanitize your hands to gain entry to this building*") could be relayed through message conveying apparatus 25.

5

In a further embodiment of the present invention, and with reference to Figure 3, the components of the system can be self-contained within the door, and the door **12** will be web enabled, by way of web enabled circuit **6**, either physically or wirelessly, through conventional means (such as wireless connection) commonly known and readily available in the art. In this manner, actions, settings and events for the restroom can be observed or changed manually on site or remotely such as via the internet by a remote operator. Preferably, in effecting this embodiment, web enabled circuit **6** will have access to information stored in the data storage device **8** by means of processor **7**, whereby events and information regarding the restroom contained in data storage device **8** can be accessed via the internet, through the web enabled circuit, by an operator.

15

Further, by way of web enabled circuit **6**, actions, settings or overview of the door can be observed or changed via the internet by a remote operator. It will also be understood that these can also be changed manually on site by the operator. Preferably, the door itself will have its own web address, through which an operator will have security access to access any collected data from the data storage device **8**, or voice recording changes, through conventional means (such as wireless connection) commonly known and readily available in the art.

20

In a further embodiment of the present invention, when approaching the door **12** of the entranceway **2** to a facility the visitor must first utilize soap/disinfectant dispenser **9** to gain unalarmed entry to or exit from the facility through the door **12** of the entranceway **2**, it being understood that the door **12** is normally in a locked position, the door being kept in a locked position by a door lock mechanism (not shown), such as a magnetic lock or other similar device, for locking and unlocking the door **12** permitting entry or exit. When the soap/disinfectant dispenser **9** is utilized by the visitor before approaching the door **12** to the entranceway **2**, the signal emitter (not shown) from the soap/disinfectant dispenser **9** transmits a signal to a processor **7**, which then deactivates temporarily the motion/presence detector **5** scanning an area immediately adjacent or close to the door **12** and the

25

30

entranceway 2. At the same time, the soap/disinfectant dispenser 9 transmits a signal to the processor 7, whereupon the processor 7 which transmits a signal to the Automatic Operator 29 to open the door, the Automatic Operator 29 being a door opener of the type commonly known and readily available in the art for automated operation of a door. As illustrated in Figure 3, the Automatic Operator 29 is preferably mounted within an upper portion or header for a door 12.

In a preferred embodiment, in the event of either a power failure, or fire, the door will unlock automatically, and/or all sensors associated with the system will become deactivated. Further, with respect to the embodiment of the door being web enabled, since numerous components of the system can be contained within the door itself, an existing door installation can be inexpensively retrofitted to include the components of the present invention. In essence, by virtue of the components of the system being self-contained within the door, installation of the automated door controlling hand disinfectant system of the present invention can be easily effected. In placing the automated door controlling hand disinfectant system of the present invention into an existing doorway, as a means of retrofitting it, the door (having the components therein) is placed on hinges, then wired to power and the Internet, so that the system is ready for operation in a prompt and efficient manner.

The present invention has been described herein with regard to preferred embodiments. However, it will be obvious to persons skilled in the art that a number of variations and modifications can be made without departing from the scope of the invention as described herein.

5 **THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR
PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:**

1. An automated door controlling hand disinfectant system for controlling access through a doorway comprising:

10

a housing being mounted near to the doorway;

a motion/presence detector being mounted on the housing and being adapted for detecting an approach of a visitor to the doorway;

15

a door lock mechanism for locking and unlocking a door permitting entry or exit through the doorway;

20

a processor being mounted in the housing and being electrically coupled to the motion/presence detector;

message conveying means being mounted on the housing and being electrically coupled to the processor;

25

product dispensing means having at least one product dispensing signal emitter integrated therewith in electronic communication with the processor; and

30

wherein when the product dispensing means are utilized, the at least one product dispensing signal emitter transmits a signal to the processor, whereupon, the processor transmits an unlocking signal to the door lock mechanism to unlock the door to permit entry or exit by the visitor.

- 5 2. The system of claim 1, wherein the system further comprises a data storage device
mounted in the housing and electrically coupled to the processor, the data storage device
providing an access allowed audio tone when the visitor has utilized the product dispensing
means and issuing an access denied audio tone when the visitor has not utilized the product
dispensing means.
- 10
3. The system of claim 2, wherein the access allowed audio tone and the access denied audio
tone are recorded on the data storage device.
- 15
4. The system of claim 3, wherein the processor is adapted for playing either the access allowed
audio tone or the access denied audio tone on the message conveying means instantaneously
after the motion/presence detector has detected the approach of the visitor to the doorway.
- 20
5. The system of claim 4, wherein the processor is adapted for displaying an access allowed
signal on the message conveying means to provide a visual indication to the visitor that
passage is permitted or an access denied signal on the message conveying means to provide
a visual indication to the visitor that passage is not permitted.
- 25
6. The system of claim 5, wherein either of the access allowed signal and access denied signal
are displayed substantially simultaneously with an issuance of either of the access allowed
audio tone and the access denied audio tone.
7. The system of claim 6, wherein the access allowed signal is a green light and the access
denied signal is a red light.
- 30
8. The system of claim 1, wherein, if the product dispensing means are not utilized, the processor
will retain the door lock mechanism in a locked position to restrict entry or exit through the
door.

- 5 9. The system of claim 1, wherein the product dispensing means, when a supply of product in the product dispensing means is low, is arranged to transmit a low supply warning to the processor to be conveyed through the message conveying means.
- 10 10. The system of claim 1, further comprising a power source constructed and arranged for connection to components of the system.
11. The system of claim 1, wherein the product dispensing means is mounted proximate to the doorway.
- 15 12. The system of claim 1, wherein the product dispensing means is mounted on an outside or inside of a building containing the doorway.
13. The system of claim 1, further comprising a plurality of product dispensing means.
- 20 14. The system of claim 1, wherein the system further comprises an electronic counter in electronic communication with the processor, the electronic counter being constructed and arranged for counting a number of visitors entering or exiting through the door.
- 25 15. An automated door controlling hand disinfectant system comprising:

a motion/presence detector adapted for detecting an approach of a visitor to a doorway;

a self-contained door constructed and arranged for integration with the doorway comprising thereon:

30 (a) processor, the processor being in electronic communication with the motion/presence detector;

5 (b) message conveying means in electronic communication with the
processor for providing an audio/visual reminder to the visitor to
wash their hands before entering or exiting through the doorway;
(c) a data storage device in electronic communication with the
10 processor for recordal of low supply warnings/low battery warnings,
settings and events for the door;
(d) a web enabled circuit in electronic communication with the data
storage device and internet, whereby the low supply warnings/low
battery warnings, settings and events for the door can be retrieved
15 from the data storage device and observed or changed on site or via
the internet by a remote attendant;
(e) a door lock mechanism in electronic communication with the
motion/presence detector, for locking and unlocking the door and
permitting entry or exit through the doorway; and

20 product dispensing means having at least one product dispensing signal emitter integrated
therewith in electronic communication with the processor;

wherein when the product dispensing means are utilized, the at least one product
dispensing signal emitter transmits a signal to the processor, whereupon, the processor
25 transmits an unlocking signal to the door lock mechanism to unlock the door to permit
entry or exit by the visitor.

16. The system of claim 15, wherein the system further comprises an automatic door operator
operably connected to the door and in electronic communication with the processor.

30 17. The system of claim 16, wherein, when the processor transmits the unlocking signal to the
door lock mechanism to unlock the door, the processor activates the automatic door
operator to open the door to permit exit by the visitor.

5

18. The system of claim 15, wherein, if the product dispensing means have not been utilized, the processor retains the door in a locked position.

10

19. The system of claim 15, wherein the system further comprises an electronic counter in electronic communication with the processor, the electronic counter being constructed and arranged for counting a number of visitors entering or exiting through the door.

15

20

25

30

FIGURE 1

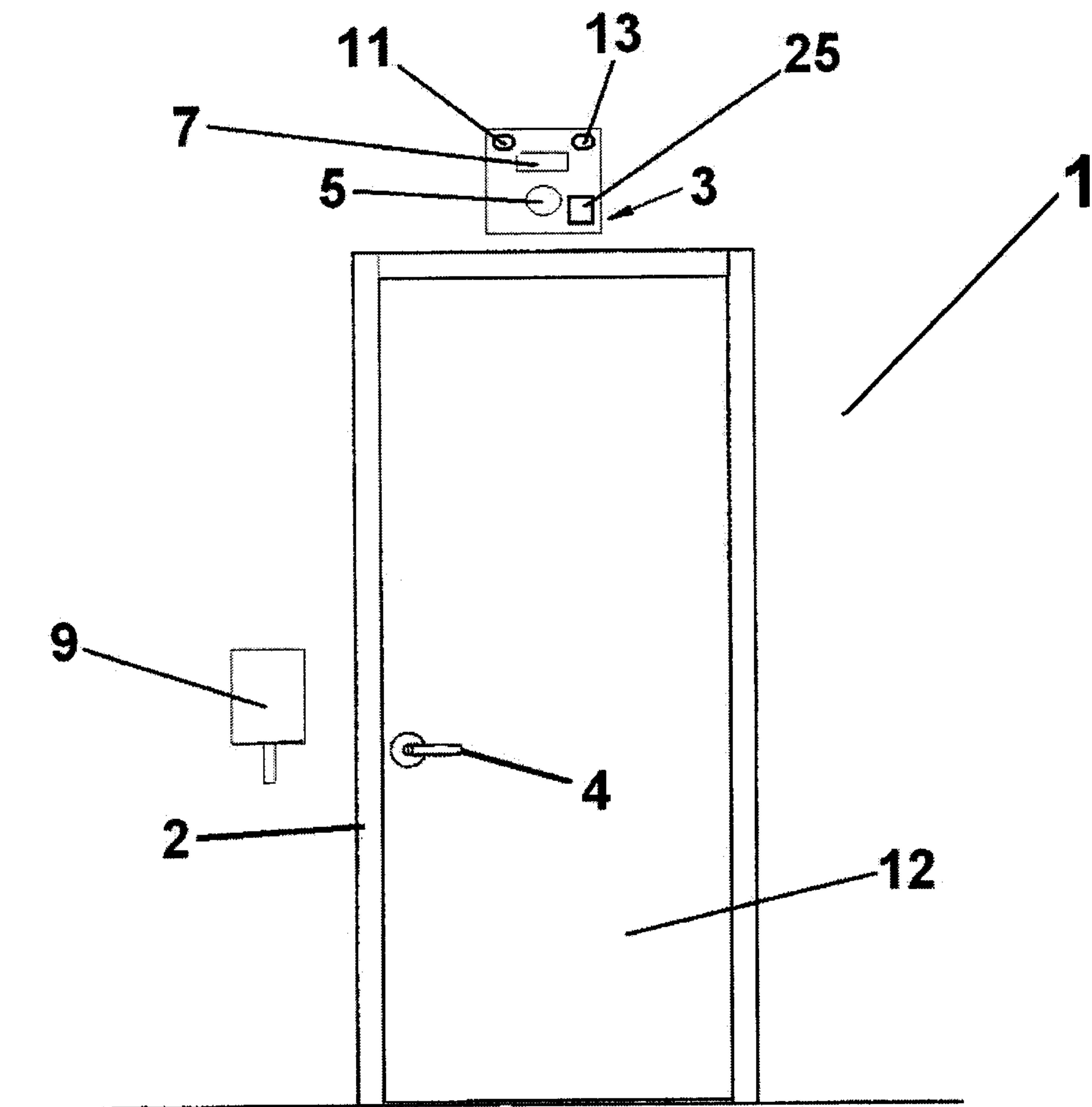


FIGURE 2

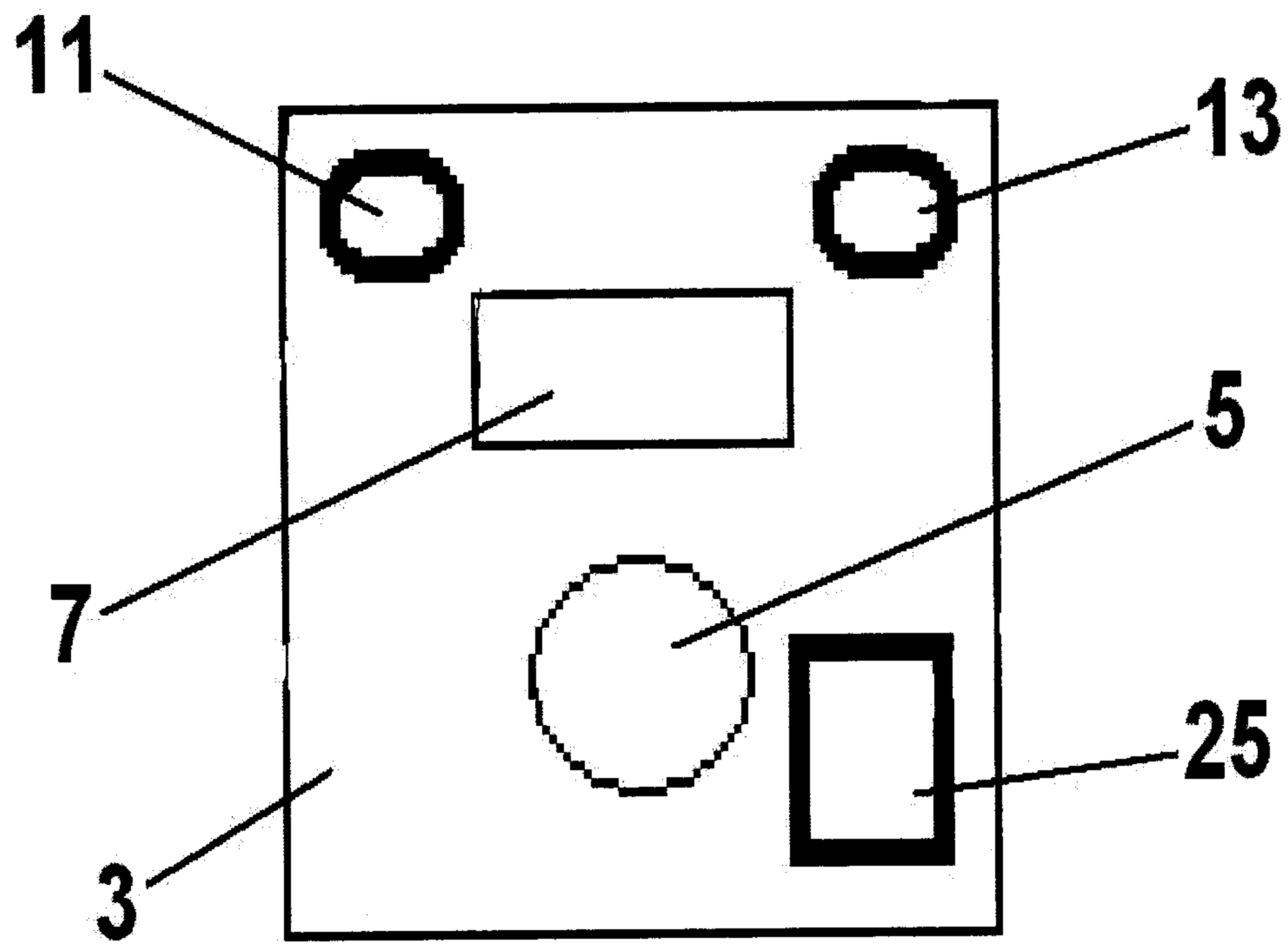


FIGURE 3