



- (51) International Patent Classification:  
E05B 49/00 (2006.01)
- (21) International Application Number:  
PCT/US2014/041869
- (22) International Filing Date:  
11 June 2014 (11.06.2014)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:  
61/834,277 12 June 2013 (12.06.2013) US
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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, JP, KE, KG, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, KM, ML, MR, NE, SN, TD, TG).

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(54) Title: SECURITY DEVICE FOR USE WITH ELECTRONIC KEY

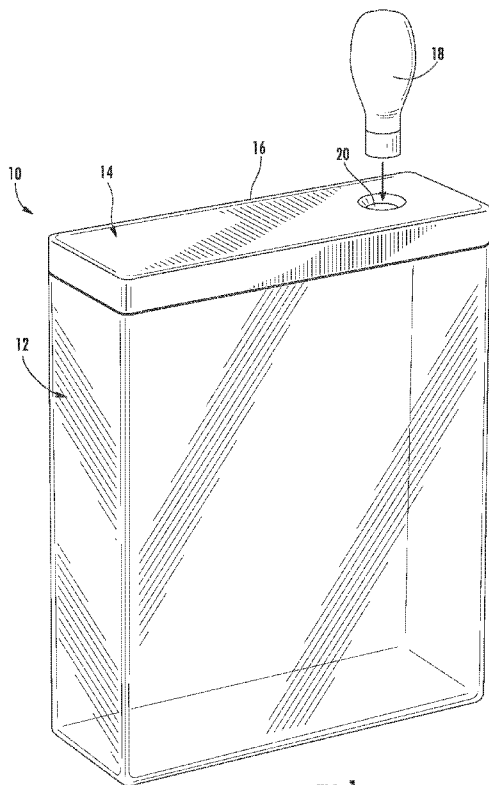


FIG. 1

(57) Abstract: Embodiments of the present invention are directed to security devices for protecting merchandise from theft. In one example, the security device includes a body portion configured to house an item of merchandise, and a lid configured to releasably engage the body portion such that the item of merchandise is secured therein. The security device also includes an electronic lock mechanism operably engaged with the body portion and/or the lid and adapted to lock the lid to the body portion.

**Declarations under Rule 4.17:**

— *of inventorship (Rule 4.17(iv))*

**Published:**

— *without international search report and to be republished upon receipt of that report (Rule 48.2(g))*

## SECURITY DEVICE FOR USE WITH ELECTRONIC KEY

### CROSS REFERENCE TO RELATED APPLICATIONS

[0001] This application claims the benefit of priority to U.S. Provisional Application No. 61/834,277 filed on June 12, 2013, the entire disclosure of which is incorporated herein by reference.

### FIELD OF THE INVENTION

[0002] Embodiments of the present invention relate generally to merchandise display security systems and methods for protecting an item of merchandise from theft. More particularly, embodiments of the invention relate to security devices for use with an electronic key.

### BACKGROUND OF THE INVENTION

[0003] It is common practice for retailers to store and/or display items of merchandise on or within a merchandise security device, such as a security display (e.g. alarming stand), security fixture (e.g. locking hook, shelf, cabinet, etc.) or security packaging (e.g. merchandise safer or box). Regardless, the security device stores and/or displays an item of merchandise so that a potential purchaser may view, and in some instances, interact with the item before making a decision whether to purchase the item. At the same time, the item is secured on or within the merchandise security device so as to prevent, or at least deter, theft of the item. The value of the item, however, may make it an attractive target for a shoplifter despite the presence of a merchandise security device. A determined shoplifter may attempt to detach the item from the security display or to remove the item from the security fixture or from within the security packaging. Alternatively, the shoplifter may attempt to remove all or a portion of the security device from the display area along with the item.

[0004] Some security devices require a key for removal or generate an alarm when an item of merchandise is removed. However, keys can be lost or misplaced, allowing unauthorized

users access to the keys.

#### BRIEF SUMMARY

[0005] Embodiments of the present invention are directed to security devices for protecting merchandise from theft. In one example, the security device includes a body portion configured to house an item of merchandise, and a lid configured to releasably engage the body portion such that the item of merchandise is secured therein. The security device also includes an electronic lock mechanism operably engaged with the body portion and/or the lid and adapted to lock the lid to the body portion.

[0006] In other embodiments, a merchandise security system for protecting merchandise from theft is provided. The merchandise security system includes a security device comprising a body portion configured to house an item of merchandise and a lid configured to releasably engage the body portion such that the item of merchandise is secured therein. The security device also includes an electronic lock mechanism operably engaged with the body portion and/or the lid and adapted to lock the lid to the body portion. In addition, the merchandise security system includes an electronic key for transferring electrical power to the security device to operate the electronic lock mechanism between locked and unlocked configurations.

[0007] In another embodiment, a point of sale system is provided. The point of sale system may include a security device comprising a lock mechanism and a point of sale terminal configured to lock or unlock the lock mechanism. The point of sale system may further include an electronic key configured to communicate with the point of sale terminal for causing the point of sale terminal to lock or unlock the lock mechanism.

#### BRIEF DESCRIPTION OF THE DRAWINGS

[0008] FIG. 1 is a perspective view of a merchandise display security device and a key for communicating therewith according to one embodiment of the present invention.

[0009] FIG. 2 is an elevation view of a lid and a lock mechanism in a locked configuration according to one embodiment of the present invention.

[0010] FIG. 3 is an elevation view of the lid and the lock mechanism shown in FIG. 2 in an unlocked configuration.

[0011] FIG. 4 is a perspective view of merchandise display security device at a point of sale terminal according to an embodiment of the present invention.

[0012] FIG. 5 is a perspective view of a point of sale terminal according to an embodiment of the present invention.

[0013] FIG. 6 is a partial view of the point of sale terminal shown in FIG. 5.

[0014] FIG. 7 is an elevation view of a coil according to an embodiment of the present invention.

[0015] FIG. 8 is a side view of the coil shown in FIG. 7.

[0016] FIG. 9 is an elevation view of a coil according to an embodiment of the present invention.

[0017] FIG. 10 is a side view of the coil shown in FIG. 9.

[0018] FIG. 11 is an elevation view of a coil according to an embodiment of the present invention.

[0019] FIG. 12 is a side view of the coil and magnets shown in FIG. 11.

#### DETAILED DESCRIPTION OF EMBODIMENTS OF THE INVENTION

[0020] Embodiments of the present invention will now be described more fully hereinafter with reference to the accompanying drawings, in which exemplary embodiments of the invention are shown. This invention may, however, be embodied in many different forms and should not be construed as limited to the embodiments set forth herein. Rather, the exemplary embodiments are provided so that this disclosure will be thorough and complete, and will fully convey the scope of the invention to those skilled in the art.

[0021] As described in greater detail below, embodiments of the present invention utilize an electronic lock that is operably engaged with a security device such as, for example, a safer, lockbox, or other secure product packaging. The security device may be any suitable security device configured to house an item of merchandise therein. In one embodiment, the security device may be suitable for placement on a locking hook or fixture or may be suitable as a standalone product. In one embodiment, the electronic lock is compatible with an electronic key for transferring data and/or electrical power to operate a lock mechanism. Although the embodiments described herein relate to safers, lockboxes, or other secure product packaging, it is understood that the electronic lock may be used with any desired security device for protecting a variety of items of merchandise.

[0022] Referring now to the accompanying drawing figures wherein like reference numerals denote like elements throughout the various views, one or more embodiments of a merchandise display security device 10 for protecting merchandise from theft are shown. A security device 10 according to embodiments of the invention is operable for use with a merchandise fixture that stores and/or displays merchandise, for example, in a retail store. In the embodiments shown and described herein, a security device, indicated generally at 10, is provided with a lock mechanism, indicated generally at 14. A merchandise security key, indicated generally at 18, may be provided to unlock the lock mechanism 14 and thereby access one or more items of merchandise stored within the security device 10.

[0023] Figures 1-3 show an embodiment of a security device 10 that generally comprises a body portion 12 and a lock mechanism 14. The security device 10 may further include a lid 16 that is configured to releasably engage the body portion 12. Generally, the lid 16 may be pivotally engaged with the body portion 12 and configured to pivot between open and closed positions. The body portion 12 and the lid 16 may cooperate to define an enclosure for storing an item of merchandise therein. The lock mechanism 14 may be operably engaged to or otherwise integrated with the body portion 12 and/or the lid 16. In one example, the lock mechanism 14 is disposed within the lid 16. The body portion 12 is configured to be locked to the lid 16 with the lock mechanism 14. In particular, the body portion 12 and the lid 16 may include one or more engagement members 19 for engaging one another.

[0024] In some embodiments, the security device 10 may not contain an internal source of electrical power, and as such, is herein termed an “electrically passive” security device for purposes of describing the invention. Thus, the lock mechanism 14 may be an electrically passive lock. The merchandise security key 18 may contain an internal source of electrical power, such as a conventional extended-life or rechargeable battery, capacitor or the like, and be configured to transfer electrical power to the security device 10 for at least the purpose of unlocking the security device.

[0025] In some embodiments, the merchandise security key 18 is an electronic key with inductive transfer capability, and the security device 10 is provided with cooperating inductive receiving capability to both unlock and lock the security device. The inductive power transfer signal may provide additional security in that the signal may be difficult to duplicate. Thus, the security device 10 may provide additional security over a simply mechanical or magnetic key.

[0026] Any particular lock mechanism 14 could be employed, such as a plunger mechanism, a cam mechanism, a sliding mechanism, or the like. For example, a locking mechanism 14 may be configured to extend outwardly from the lid 16 and engage the body portion 12. The locking mechanism 14 may then be retracted into the lid 16 when the lock mechanism is unlocked. Likewise, the locking mechanism 14 could be configured to extend from the body portion 12 and engage/disengage the lid 16. In some embodiments, a lock mechanism 14 is operated using electrical power and an electronic key 18 as explained in further below.

[0027] Figures 2 and 3 illustrate an embodiment of a lock mechanism 14 disposed within the lid 16. As shown, the locking mechanism 14 includes a latch 24 that is configured to extend and retract relative to the lid 16. For instance, Figures 2-3 show that the engagement members 19 may be configured to move linearly in response actuation of the latch 24. The security device 10 may include circuitry or electronics 22 (e.g., a printed circuit board or PCB) for communicating with the electronic key 18 such that electrical power is transferred to the lock mechanism 14 for operation thereof. The circuitry or electronics 22 may be electrically connected to a transfer port 20 that is configured to facilitate communication with a key 18.

The circuitry or electronics 22 may also be electrically connected to an actuator 26 that is operably engaged with the latch 24. In one embodiment, electrical power transferred via the key 18 to the transfer port 20 and circuitry or electronics 22, causes the actuator 26 to be actuated which thereby causes the latch 24 to move from a locked configuration to an unlocked configuration. It is understood that a variety of actuators and latches may be employed to facilitate mechanical locking or unlocking. Actuation of the latch 24 may in turn cause the latch to disengage the body portion 12, which thereby allows the lid to disengage the body portion and to be opened.

[0028] As discussed above, an electronic key 18 may be used with the security device 10. It may be desirable that the electronic key 18 is required to both unlock and lock (or re-lock) the security device 10 so that the authorized person responsible for unlocking the security device is held accountable for locking the security device after each time his or her key is used to unlock the security device. In one embodiment, electronics disposed within the electronic key 18 may be used to assign a unique identifier corresponding to the user of the key to a memory, and to thereafter record the date and time of each activation of the key into the memory. In some embodiments of the invention, a successful activation of the key 18 occurs, for example, when a security code of the key matches a security code assigned to the security device 10, and the key subsequently transfers electrical power to the security device to operate a lock mechanism 14 of the security device between a locked configuration and an unlocked configuration or between an unlocked configuration and a locked configuration.

[0029] Regardless, one end of the electronic key 18 may be positioned over, or adjacent to, a location, such as a transfer port 20, visual guide, indentation or recess, on an outward-facing exterior surface of the lid 16, referred to herein as a transfer port. The key 18 may then be activated (e.g., by depressing an actuator button provided on the exterior of a housing of the key). Activation of the actuator button in the locked configuration causes a lock mechanism 14 of the security device 10 to disengage (e.g., unlock), such that the lid 16 may be disengaged from the body portion 12 to access the merchandise stored therein.

[0030] Once the merchandise has been accessed, for example, by an authorized person, such



as a sales associate, the lid 16 may be returned to a closed position on the body portion 12. Thereafter, the security device 10 may be returned from the unlocked configuration to the locked configuration by repositioning transfer probe of the key 18 over, within, adjacent, or proximate to the transfer port 20 on the lid 16, and depressing actuator button again to cause the lock mechanism 14 to engage (e.g., re-lock) with the body portion 12 in the closed and locked position and thereby prevent access to the merchandise. Alternatively, the lid 16 may automatically lock when secured to the body portion 12, such as in a snap fit. Therefore, in some embodiments, an electronic key 18 is required to lock or unlock the lock mechanism 14. In other embodiments, the lock mechanism 14 is configured to automatically lock when the lid 16 is secured to the body portion 12, and the electronic key 18 may be used to unlock the lock mechanism.

[0031] By way of example, the security device 10 and the electronic key 18 may each be provided with an optical transceiver, for example an infrared (IR) transceiver, for transmitting and receiving infrared (IR) signals therebetween. Alternatively, the transfer port 20 need not be optically transparent and the electronics disposed within the key may wirelessly communicate with the electronics 22 (e.g., PCB) disposed within the security device 10, for example, via radio frequency (RF) transceivers transmitting and/or receiving RF signals therebetween.

[0032] In the embodiment shown and described herein, the electronic key 18 may be programmed with a security code and the security device 10 may be programmed with the same security code, for example, by the key or by the same security device that programmed the key. Thereafter, the transfer probe of the key 18 may be positioned within, adjacent, or proximate the transfer port 20 of the lid 16 and the actuator button may be pressed to activate communication of the security code between the security device and the key. In one example, the electronics of the key 18 verify that the security device 10 has a security code, and the electronics 22 (e.g., PCB) disposed within the security device then query the key for its security code. As previously described herein, the security code may be wirelessly communicated between the security device 10 and the key 18 by infrared (IR) optical transmission. Alternatively, the security code may be transmitted and received by electrical

contacts, acoustic transmission (e.g., RF signals) or magnetic induction. In the event that the security code of the key 18 matches the security code of the security device 10, the key is then permitted to transfer electrical power to the security device, for example, to operate the lock mechanism 14. The key 18 may transfer electrical power to the security device 10 in any suitable manner, such as by electrical contacts, acoustical transmission (e.g., RF signals) or magnetic induction.

[0033] The embodiments provided herein also broadly describe a merchandise display security system and method including an electronic key 18 that transfers electrical power to a merchandise security device 10 wherein the merchandise security device comprises a lock mechanism 14 that is operated by the electrical power transferred from the key to the security device. The system and method may further comprise an optional programming station operable for programming the electronic key 18 with a security code, for example, a security disarm code (SDC). The electronic key 18 and the security device 10 may each be pre-programmed with the same SDC into a respective permanent memory. Alternatively, the electronic key 18 may first be programmed with the SDC by the programming station and the security device 10 may subsequently be programmed with the same SDC by the programming station or by the electronic key. The electronic key 18 may be provisioned with a single-use (e.g., non-rechargeable) internal power source, such as a conventional or extended-life battery. Alternatively, the electronic key 18 may be provisioned with a multiple-use (e.g., rechargeable) internal power source, such as a conventional capacitor or rechargeable battery. In some embodiments, the electronic key 18 may be pre-programmed with a security code or may be self-programming in other embodiments.

[0034] In any case, the internal source of electrical power may be permanent, semi-permanent (e.g., replaceable), or rechargeable, as desired. In the latter instance, the system and method may further comprise an optional charging station with, for example, inductive power transfer capability operable to initially charge and/or to subsequently recharge the internal power source of the electronic key 18. Furthermore, the electronic key 18 and/or the security device 10 may be provided with only a transient memory, such that the SDC must be reprogrammed periodically. In this instance, the programming station may be configured to

initially program and to subsequently reprogram the SDC into the electronic key 18 and the security device 10, or alternatively, the electronic key is operable to initially program and to subsequently reprogram the security device with the SDC. The electronic key 18 may be further operable to transfer electrical power to the security device 10 to operate the lock mechanism 14. In other exemplary embodiments, the electronic key 18 is operable to wirelessly communicate the security code with the security device 10 and to transfer electrical power by induction to operate the lock mechanism 14 of the security device.

[0035] It should be noted that although the invention is described with respect to embodiments including an electronic key 18 for transferring data and electrical power to a merchandise security device 10 to operate a lock mechanism 14, the invention is equally applicable to an electronic key for transferring only electrical power to a merchandise security device to operate any component of the merchandise security device, whether or not the device includes an internal or external power source for operating another component of the device.

[0036] In one embodiment, the electronic key 18 is configured to transfer both data and power to the security device 10 that comprises a lock mechanism 14, which may include various electronic and/or mechanical components as discussed above. Accordingly, the electronic key 18 may be an active device in the sense that it has an internal power source sufficient to operate the lock mechanism 14 of the security device. As a result, the electronic key 18 may be configured to transfer both data and power from an internal source, such as a logic control circuit (e.g., data) and a battery (e.g., power) disposed within the key. The data (e.g., a handshake communication protocol and SDC) may be transferred by electrical contacts, optical transmission, acoustic transmission, radio frequency (RF) or magnetic induction. In essence, the key 18 and the merchandise security device 10 may communicate with each other to determine whether the merchandise security device is an authorized device that does not have a security code, or is a device having a proper (e.g., matching) SDC. When the handshake communication protocol is successful and the merchandise security device 10 is an authorized device having the same or matching SDC, the key 18 causes the internal power source of the key to transfer electrical power to the device 10 to operate the lock mechanism 14.

[0037] In some embodiments, electrical contacts disposed on the security key 18 electrically couple with cooperating electrical contacts on the lid 16 to transfer power from the internal battery of the key to the merchandise security device 10. Power may be transferred directly to the lock mechanism 14, or alternatively, may be transferred to a power circuit disposed within the merchandise security device 10 that operates the lock mechanism of the security device.

[0038] In another embodiment, power is transferred from the electronic key 18 to the security device 10 by induction across the transfer port 20 of the security device using an inductive transceiver disposed within a transfer probe of the key that is aligned with a corresponding inductive transceiver disposed within the lid 16. For example, the transfer probe of the key 18 may comprise an inductive transceiver coil that is electrically connected to the logic control circuit of the key to provide electrical power from the internal battery of the key to an inductive transceiver coil 25 disposed within the lid 16. The inductive transceiver coil 25 of the lid 16 then transfers the electrical power from the internal battery of the key to the lock mechanism 14 disposed within the lid (e.g., for actuating a plunger). As previously mentioned, the power transferred from the key 18 may be used to unlock the lock mechanism 14, for example, utilizing an actuator 26, electric motor, DC stepper motor, solenoid, or the like, so that the lid 16 can be removed from the body portion 12.

[0039] In some embodiments, the electronic lock and the electronic key are similar to those disclosed in U.S. Patent Publ. No. 2013/0081434, entitled Cabinet Lock for Use with Programmable Electronic Key and filed September 28, 2012, U.S. Patent Publ. No. 2012/0047972, entitled Electronic Key for Merchandise Security Device and filed August 31, 2011, U.S. Patent Publ. No. 2011/0254661, entitled Programmable Security System and Method for Protecting Merchandise and filed June 27, 2011, and U.S. Provisional Application No. 61/904,479, entitled Security Device for Use with an Electronic Key, which are hereby incorporated by reference in their entirety. In other embodiments, the electronic lock and the electronic key are similar to those manufactured by InVue Security Products Inc., including the Plunger Locks, Smart Locks, and IR2 and IR2-S Keys.

[0040] In another embodiment shown in Figures 4-6, a security device 100 is configured to

be utilized in a point of sale environment. In this regard, the security device 100 may be similar to the security device 10 discussed above in that the device includes a lid 102 configured to be removably secured to a body portion 104. In this particular embodiment, the lid may include a magnetically actuated lock mechanism 105. The magnetically actuated lock mechanism 105 may be similar to those actuated by a Q4 type key (manufactured by InVue Security Products Inc.). The magnetically actuated lock mechanism 105 may include one or more engagement features 106 configured to be engaged by one or more corresponding engagement features 108 at a point of sale terminal 112 or location. The engagement features 108 may be used to align the magnetically actuated lock mechanism 105 with the security device 10. In some cases, the engagement features 108 may comprise magnets. Thus, the point of sale terminal 112 may include a magnetically actuated mechanism 110 or detacher operably engaged with the engagement features 108 that is configured to generate a magnetic field and to cooperate with the lock mechanism 105 to unlock or otherwise release the lid 102 from the body portion 104. Alternatively, the magnetically actuated lock mechanism 105 may simply move one or more magnets proximate or adjacent to a support surface such that placement of the lid 102 on or near the support surface allows the magnetic field to interact with the lock mechanism in the lid.

[0041] In one embodiment, the point of sale terminal 112 includes a transfer port 120 configured to communicate with an electronic key 18. The electronic key 18 and transfer port 120 may be similar to that described above, wherein the electronic key is configured to transfer electrical power and/or data signals wirelessly. For example, the electrical key 18 may transfer a unique code via the transfer port 120. Where the code matches a code stored at the point of sale terminal 112, the magnetically actuated mechanism 110 may be raised for engagement or communication with the lid 102. Such actuation may occur using power supplied by the key 18 or via a separate power source in communication with the point of sale terminal 112 (e.g., a battery or external power). The electronic key 18 may be configured to transfer power to the point of sale terminal 112 such that the magnetically actuated mechanism 110 is configured to be energized and/or moved into a particular position for interacting with the security device 10. For instance, the electrical power may be used to move the engagement members 108

upwardly from a retracted, inaccessible position to an extended position. In the extended position, the engagement members 108 are configured to be inserted in and engage the engagement features 106. The magnetically actuated mechanism 110 may generate a magnetic field that is configured to unlock the lock mechanism 105 disposed within the lid 102 by interacting with magnetically attractive material and/or magnets within the lid. The engagement members 108 could be moved (e.g., extended and retracted) using any desired technique, such as with a motor, solenoid, plunger, mechanical actuators, etc.

[0042] In another embodiment, where the code matches a code stored at the point of sale terminal 112, the key 18 may transfer electrical power for actuating the magnetically actuated mechanism 110. The electronic key 18 may be configured to transfer power inductively to the security device 10. For example, the point of sale terminal 112 may include a coil or winding configured to transfer or conduct power supplied by the key 18. The coil may then be used to transfer power to a lock mechanism 105 disposed within the lid 102 (e.g., via inductance). Such a lock mechanism 105 could be similar to the lock mechanism 14 described above.

[0043] Figures 7-12 illustrate various embodiments of a magnetically actuated mechanism 110 and a coil 114 that may be employed, which may depend on the particular lock mechanism associated with the security device 100. For example, the magnetically actuated mechanism 110 may utilize magnetic attraction to interact with magnetically attractable material in the lid 102. Figures 7-8 show that the coil 114 may surround a pair of magnets or ferrite cores 116 that are positioned adjacent to the point of sale terminal 112. As shown, the coil 114 and magnets or ferrite cores 116 may be disposed below or within the point of sale terminal 112 so as to be inaccessible or visible to customers. Figures 9-10 show an alternative arrangement where the coil 114 surrounds only one of a pair of magnets or ferrite cores 116. Moreover, Figures 11-12 demonstrate that the coil 114 may surround a single magnet or core 116. In each illustrated instance, the coil surrounds at least one of the magnets or cores 116, although the illustrations are not intended to be limiting. As such, a variety of configurations of the coil 114 and one or more magnets or cores 116 may be utilized. In some embodiments, the coil 114 and ferrite cores 116 may cooperate to function as an electromagnet to generate a magnetic field. Thus, as power is transferred to the coil 114, such as when the key 18 communicates with the

transfer port 120, a magnetic field may be generated for interacting with the security device 10. In other embodiments, a combination of electromagnet and magnet may be used for interacting with the security device 10, such that power transferred to the coil 114 creates a magnetic field that cooperates with a magnet 116 not surrounded by the coil. In one embodiment, communication with the key 18 may facilitate moving the magnets or cores 114 for engaging or communicating with the security device 10. Therefore, the magnets or cores 114 may only be able to engage or otherwise communicate with the security device 10 when moved to an operable position following communication with a key 18. In another embodiment, the coil 114 may be configured to transfer power to actuate an electronic lock mechanism 105. Thus, the point of sale terminal may accommodate different types of lock mechanisms 105, and the magnetically actuated mechanism 110 may take alternative forms, whether operating via magnetics, mechanically, and/or electronically for cooperating with the security device.

[0044] The foregoing has described one or more embodiments of a merchandise display security device for displaying and protecting an article of merchandise. Embodiments of a merchandise display security device have been shown and described herein for purposes of illustration. Those of ordinary skill in the art, however, will readily understand and appreciate that numerous variations and modifications of the invention may be made without departing from the spirit and scope of the invention. Accordingly, all such variations and modifications are intended to be encompassed by the appended claims.

That which is claimed is:

1. A security device for protecting merchandise from theft, the security device comprising:
  - a body portion configured to house an item of merchandise;
  - a lid configured to releasably engage the body portion such that the item of merchandise is secured therein; and
  - an electronic lock mechanism operably engaged with the body portion and/or the lid and adapted to lock the lid to the body portion.
2. The security device of Claim 1, wherein the lock mechanism is electrically passive and is configured to receive electrical power from an electronic key to operate the lock mechanism between a locked configuration and an unlocked configuration.
3. The security device of Claim 1, wherein the electronic lock mechanism comprises a latch that is configured to cooperate with the body portion to lock the lid to the body portion.
4. The security device of Claim 3, wherein the electronic lock mechanism comprises circuitry electrically connected to an actuator, and wherein the actuator is operably engaged with the latch.
5. The security device of Claim 4, wherein the circuitry is configured to receive electrical power from an electronic key to actuate the actuator and thereby move the latch from a locked configuration to an unlocked configuration.
6. The security device of Claim 1, wherein the lid comprises a transfer port for wirelessly communicating with a key.
7. A merchandise security system for protecting merchandise from theft, the merchandise security system comprising:
  - a security device comprising:
    - a body portion configured to house an item of merchandise;
    - a lid configured to releasably engage the body portion such that the item of merchandise is secured therein; and



an electronic lock mechanism operably engaged with the body portion and/or the lid and adapted to lock the lid to the body portion; and

an electronic key for transferring electrical power to the security device to operate the electronic lock mechanism between locked and unlocked configurations.

8. A merchandise security system according to Claim 7, wherein the electronic key is configured to transfer electrical power to the electronic lock mechanism by inductive transfer.

9. A merchandise security system according to Claim 7, wherein the electronic key is programmed with a security code and is configured to communicate the security code to the electronic lock mechanism by wireless communication.

10. A merchandise security system according to Claim 9, wherein the electronic key is configured to communicate the security code to the electronic lock mechanism by infrared (IR) optical transmission.

11. A merchandise security system according to Claim 7, wherein the lid comprises a transfer port for wirelessly communicating with the electronic key.

12. A method for protecting merchandise enclosed within a security device from theft, the method comprising:

removably attaching a lid to a body portion such that an item of merchandise is secured therein; and

transferring electrical power from an electronic key to the lid to lock the lid to the body portion and/or unlock the lid from the body portion.

13. The method according to claim 12, wherein transferring comprises transferring electrical power from the electronic key to the lid to unlock the lid from the body portion.

14. The method according to claim 12, wherein transferring comprises inductively transferring electrical power.

15. The method according to claim 12, further comprising wirelessly communicating a

security code from the electronic key.

16. A point of sale system comprising:
  - a security device comprising a lock mechanism;
  - a point of sale terminal configured to lock or unlock the lock mechanism; and
  - an electronic key configured to communicate with the point of sale terminal for causing the point of sale terminal to lock or unlock the lock mechanism.
17. The point of sale system of Claim 16, wherein the point of sale terminal comprises a magnetically actuated mechanism.
18. The point of sale system of Claim 17, wherein the point of sale terminal is configured to move the magnetically actuated mechanism in response to communication with the electronic key.
19. The point of sale system of Claim 18, wherein the lock mechanism is configured to be unlocked by the magnetically actuated mechanism only after the electronic key has communicated with the point of sale terminal.
20. The point of sale system of Claim 16, wherein the security device comprises:
  - a body portion configured to house an item of merchandise; and
  - a lid configured to releasably engage the body portion such that the item of merchandise is secured therein,wherein the lock mechanism is operably engaged with the body portion and/or the lid and is adapted to lock the lid to the body portion.

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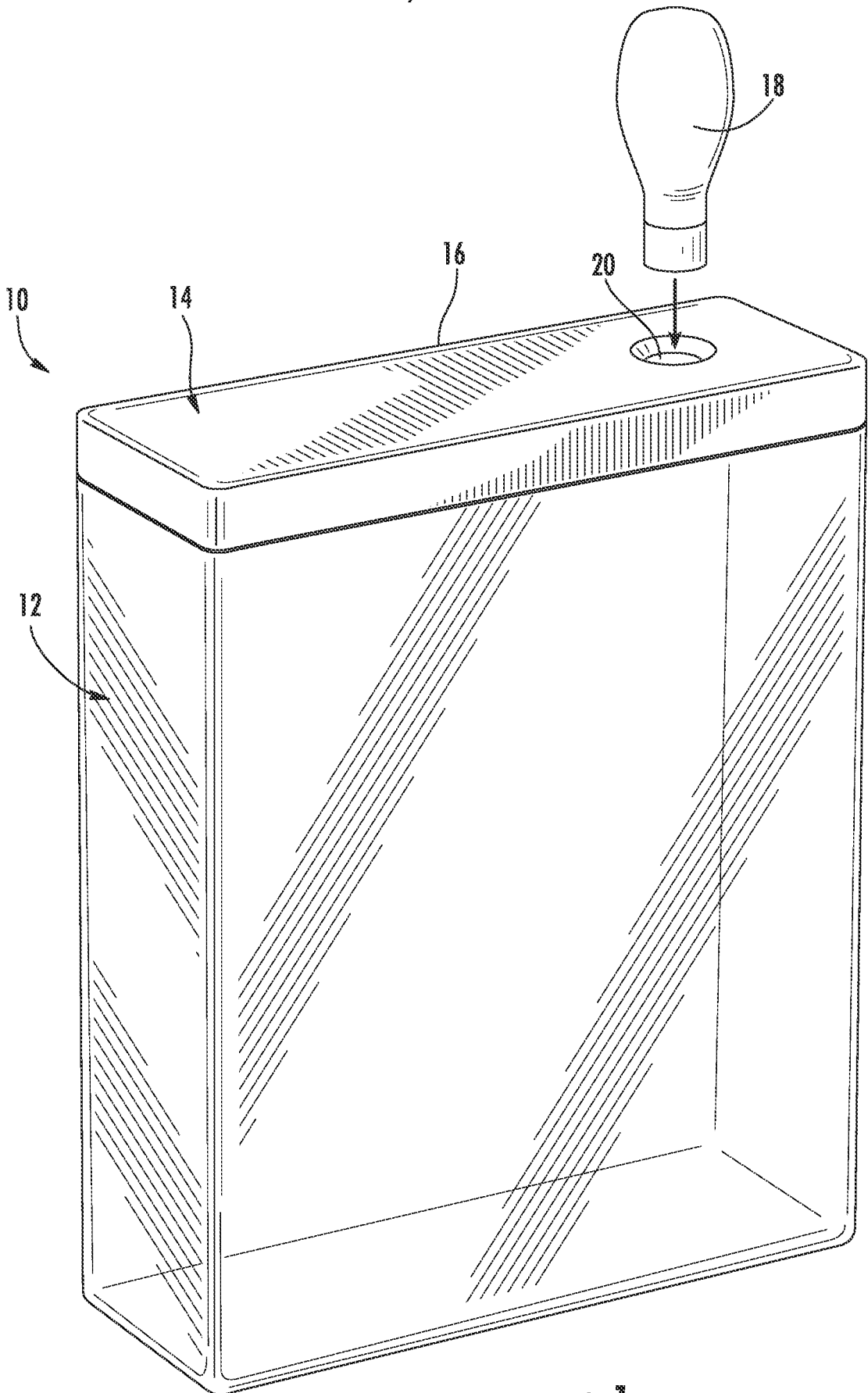


FIG. 1

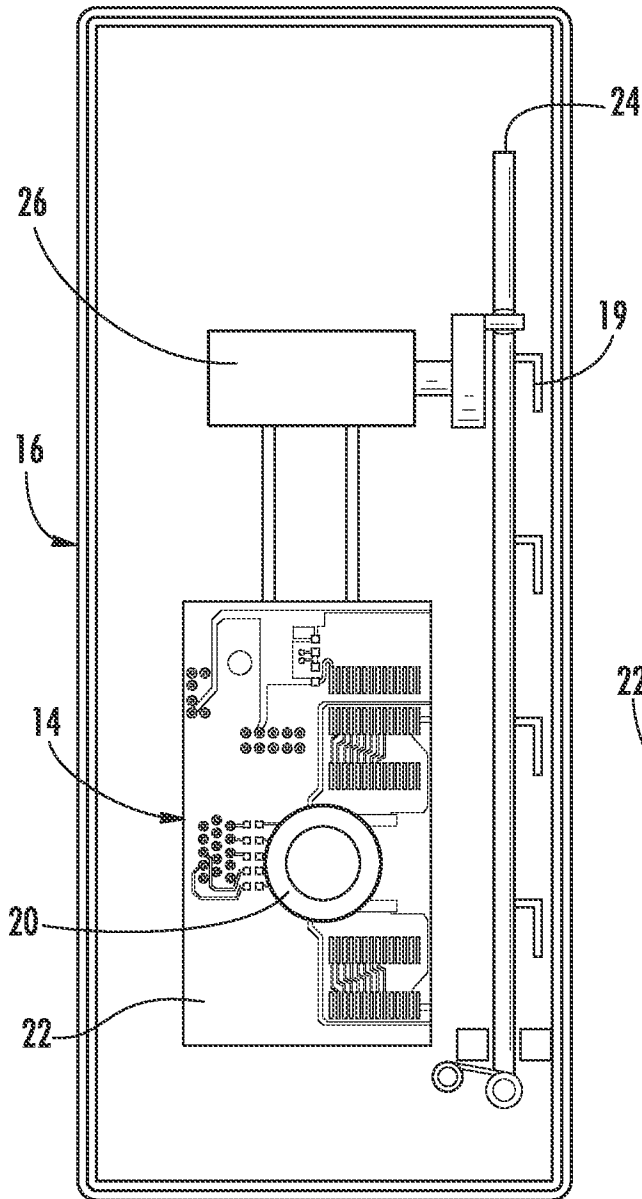


FIG. 2

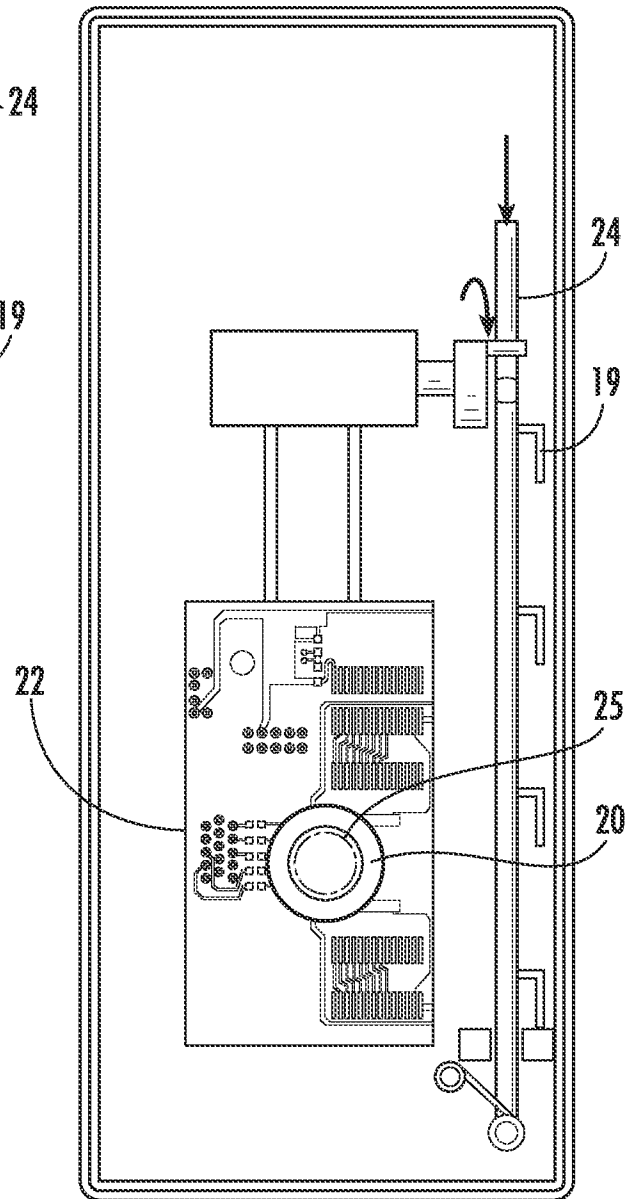


FIG. 3

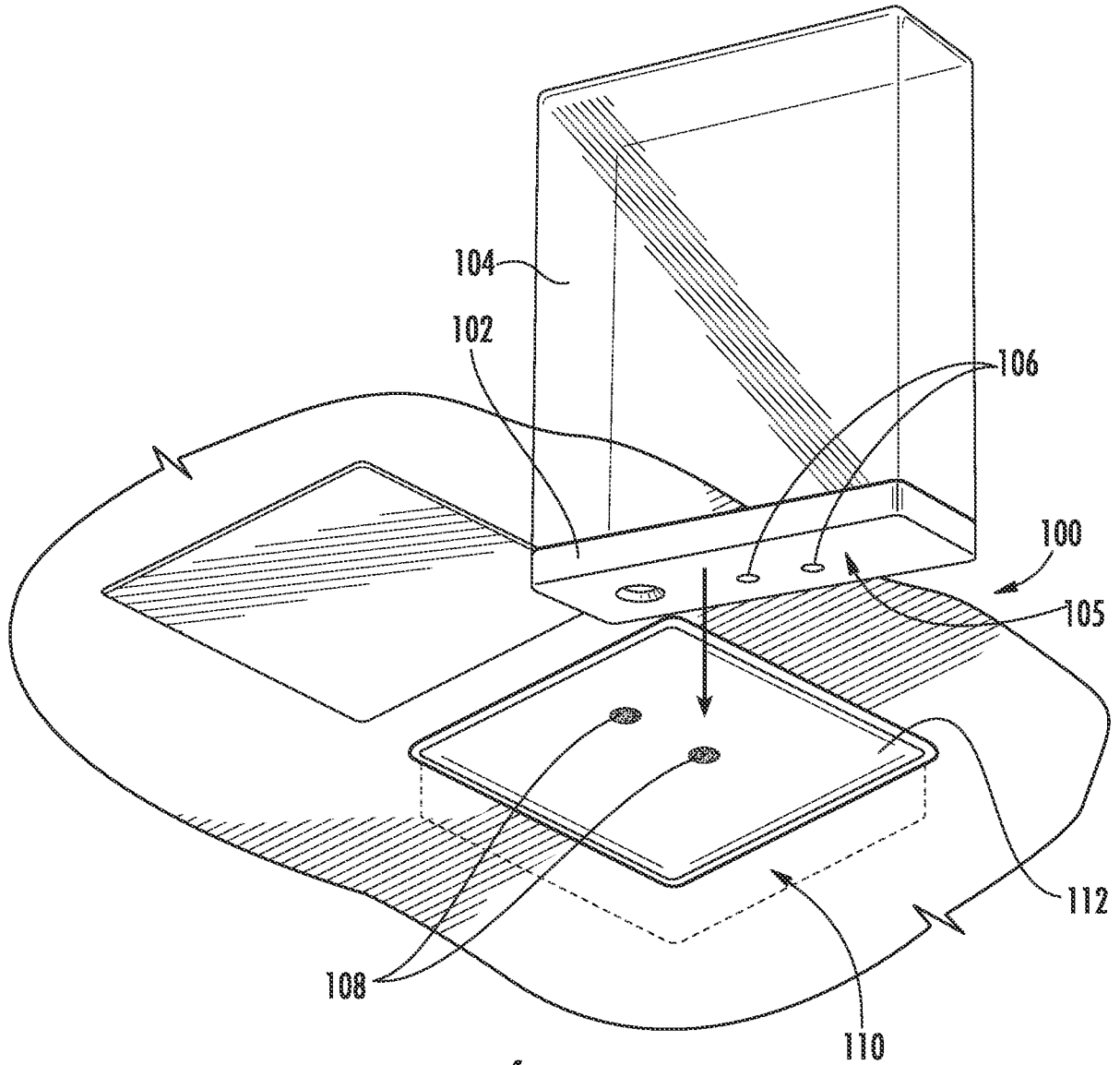


FIG. 4

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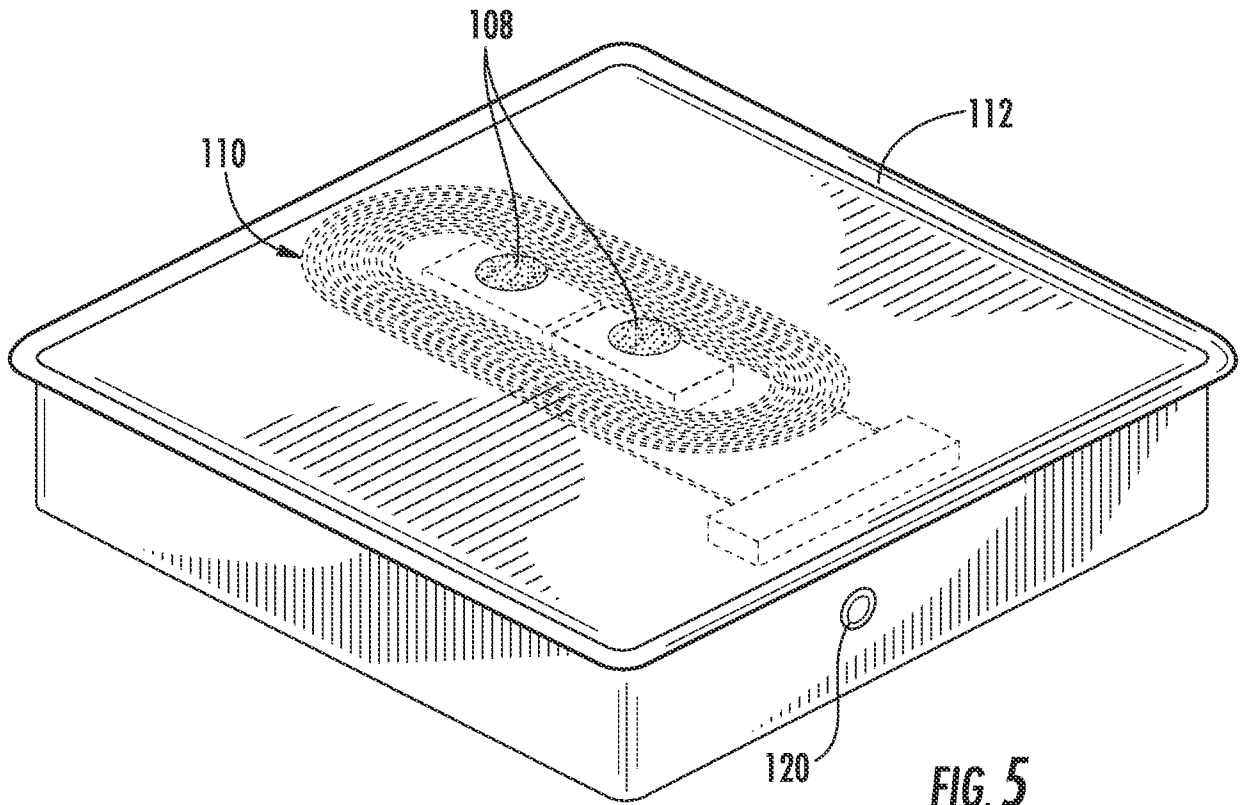


FIG. 5

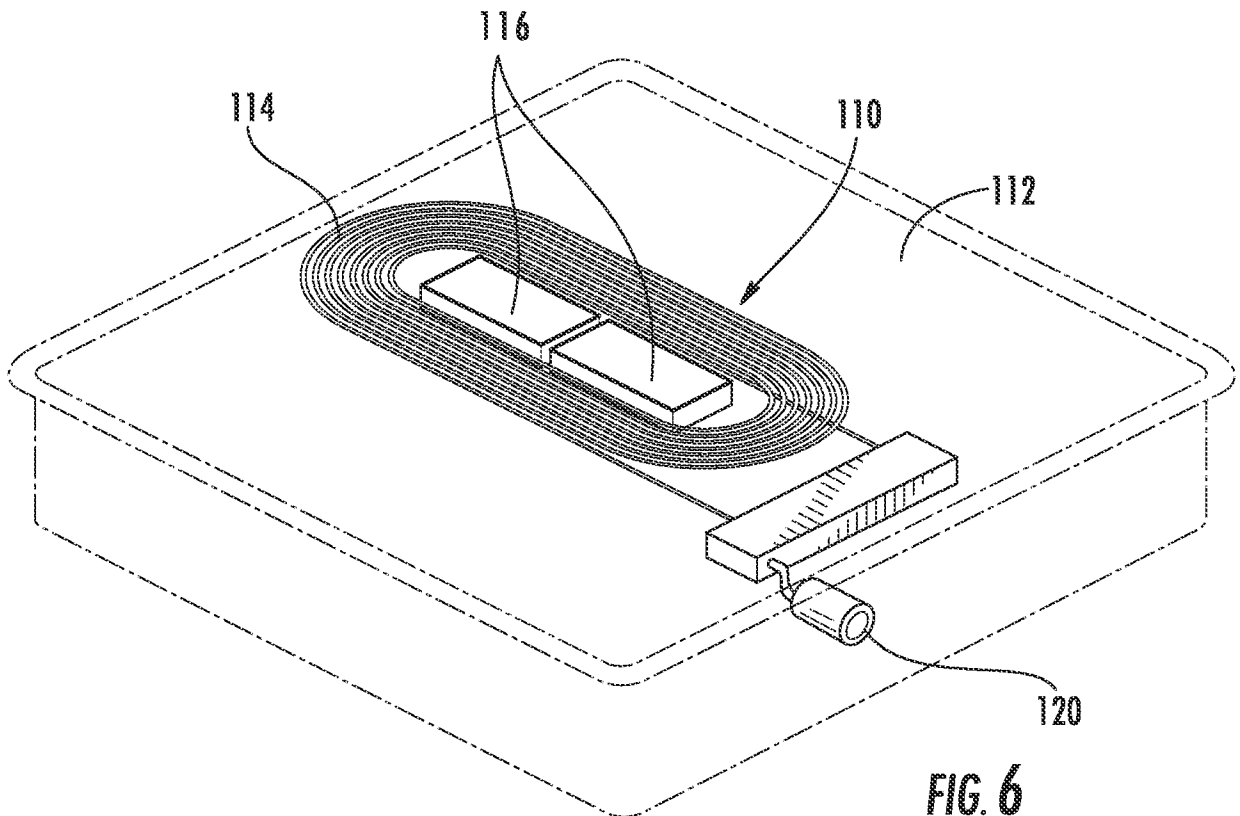


FIG. 6

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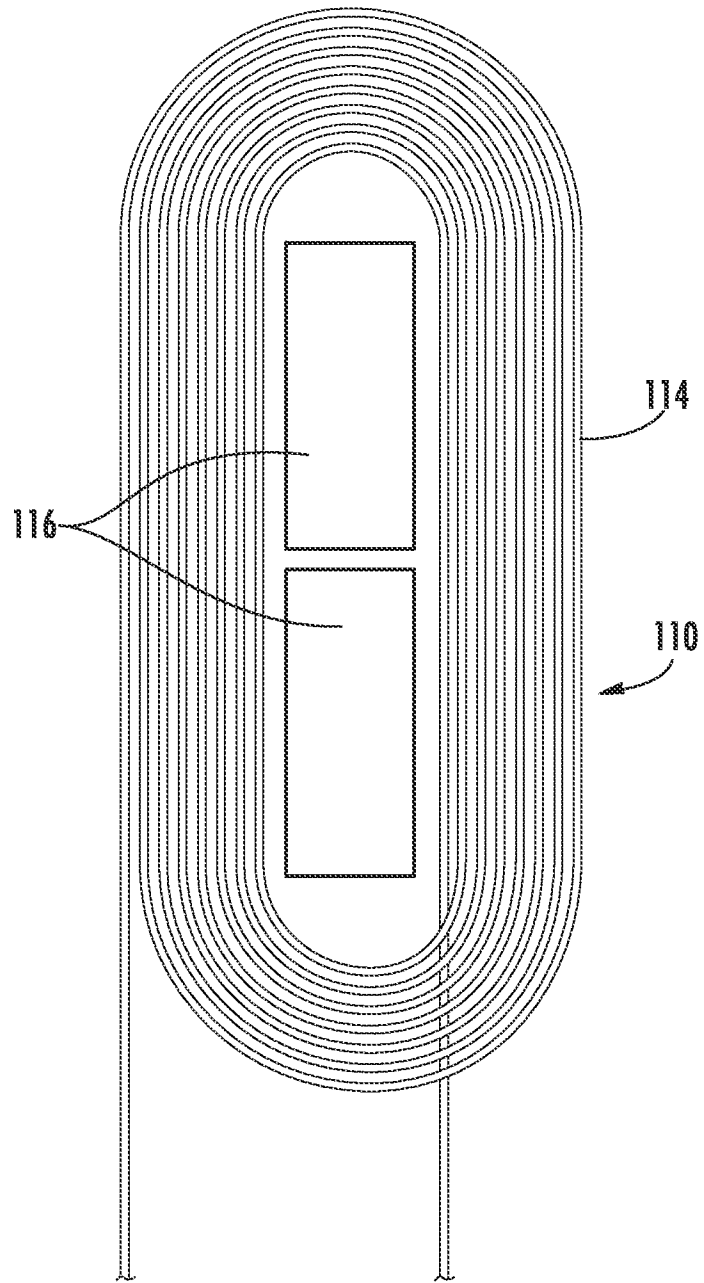


FIG. 7

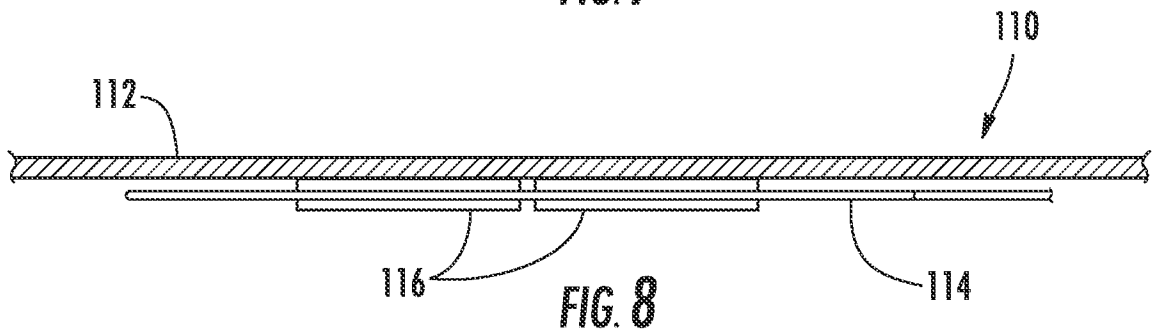


FIG. 8

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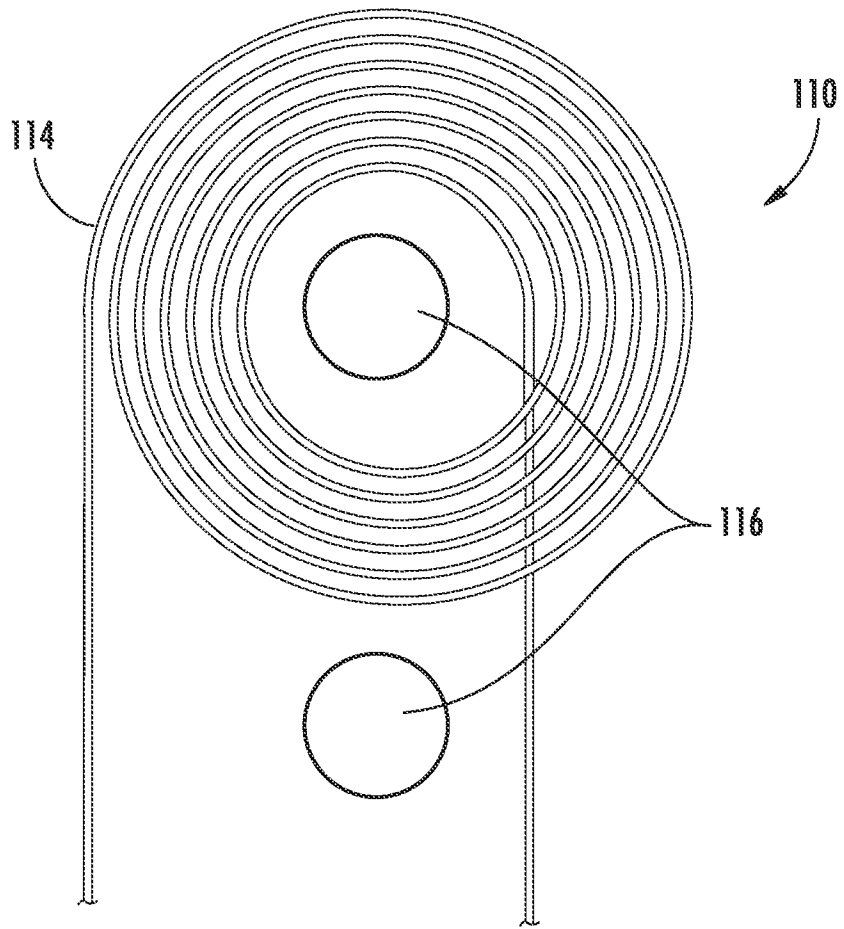


FIG. 9

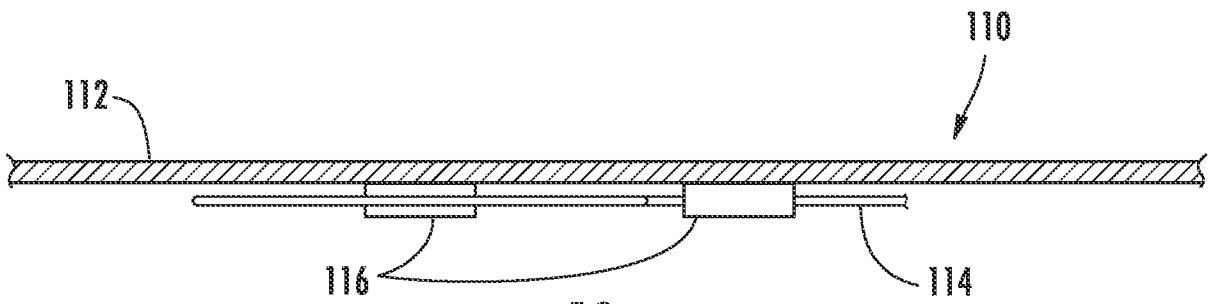


FIG. 10



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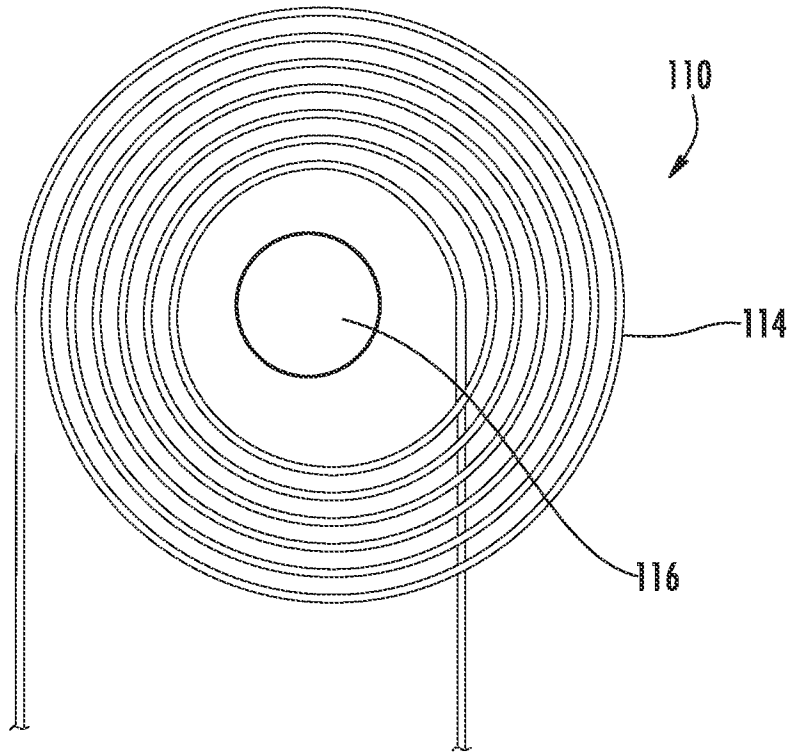


FIG. 11

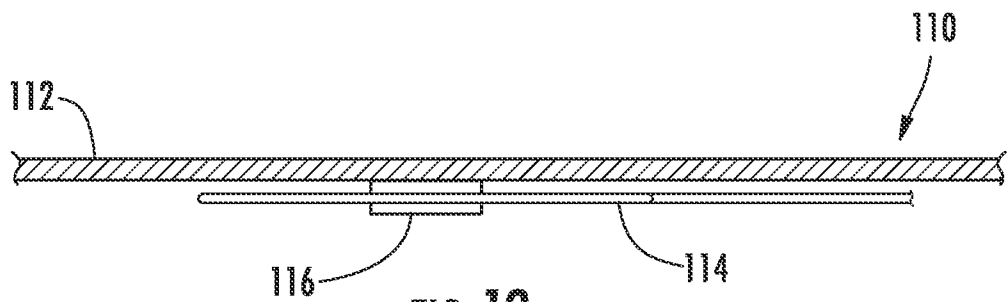


FIG. 12