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(54) **TOY PLAY SET WITH MULTIPLE MODES AND A HOUSING FOR A PORTABLE ELECTRONIC DEVICE**

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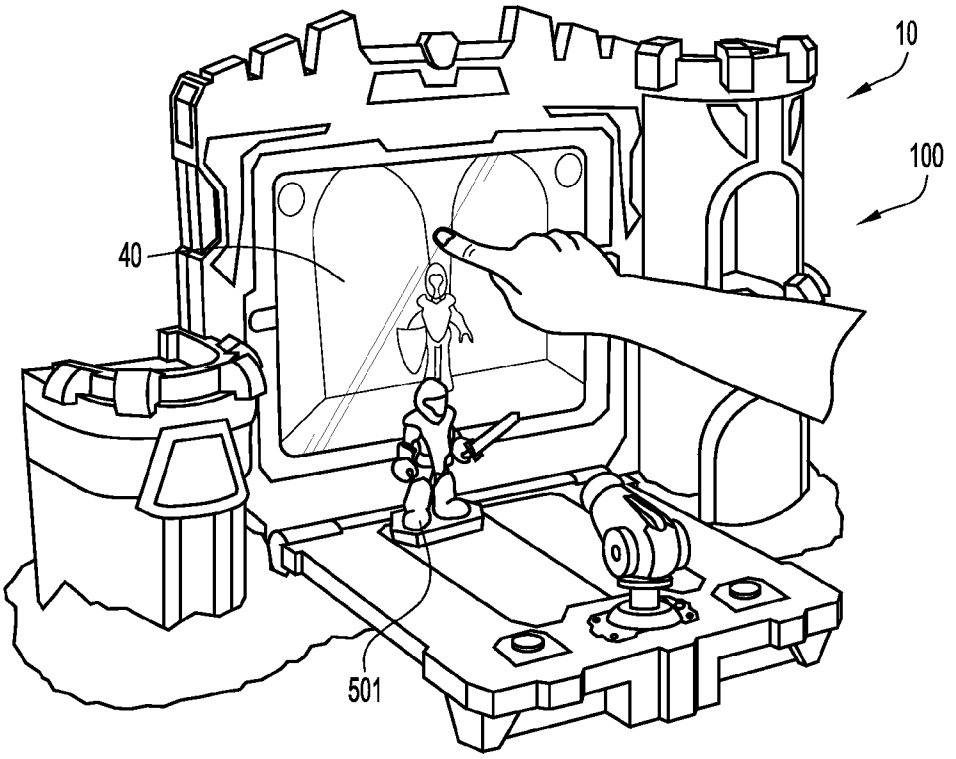
USPC **446/71**

(57) **ABSTRACT**

A toy play set with multiple modes and a housing for a touchscreen portable electronic device includes a support structure, a first movable portion defining a housing configured to receive a portable electronic device, and a second movable portion. The first and second movable portions are rotatably coupled to the support structure and movable between a first configuration and a second configuration. In the first configuration, the first movable portion is in an upright orientation and in the second configuration the first movable portion is in a flat orientation. The portable electronic device is configured to provide different game modes depending at least upon the orientation of the first movable portion and the detection of certain toy objects thereon.



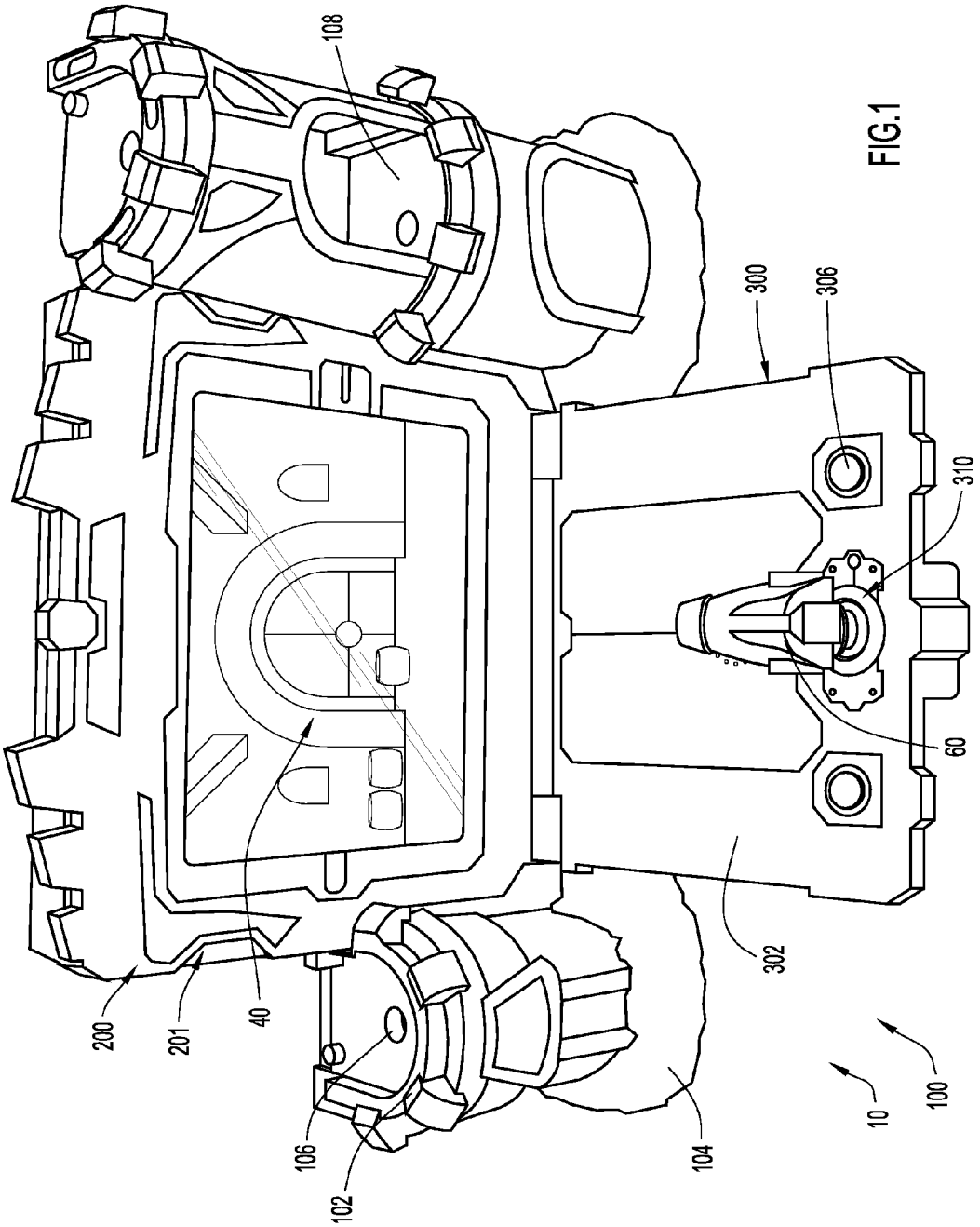


FIG.1

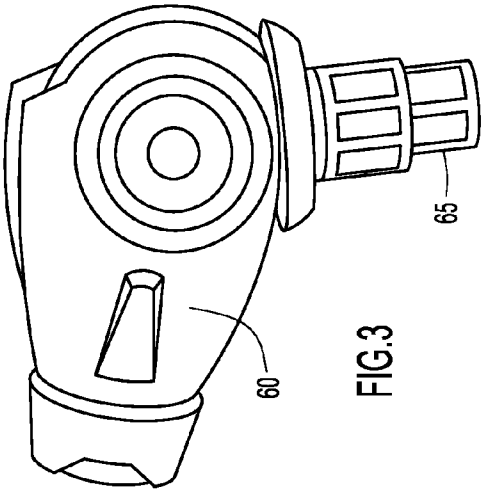


FIG.3

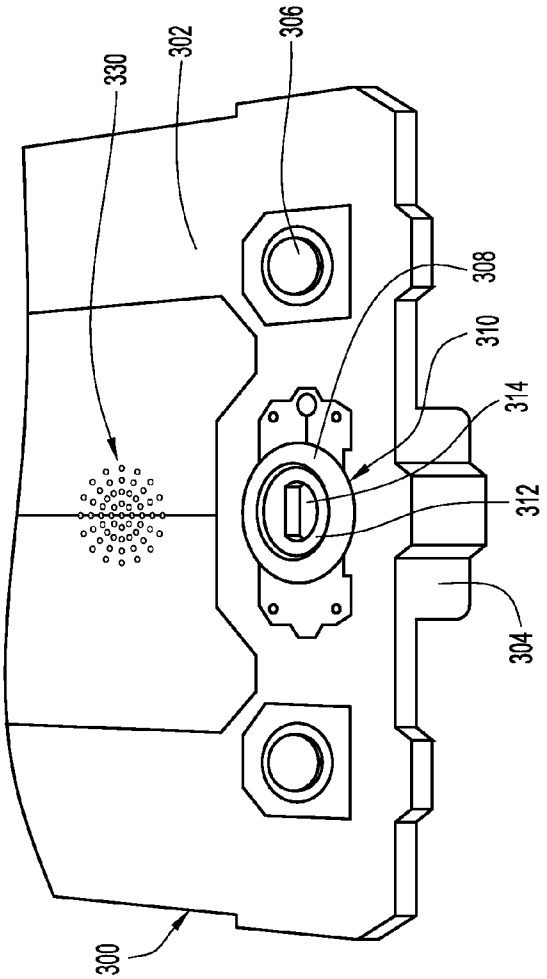


FIG.2

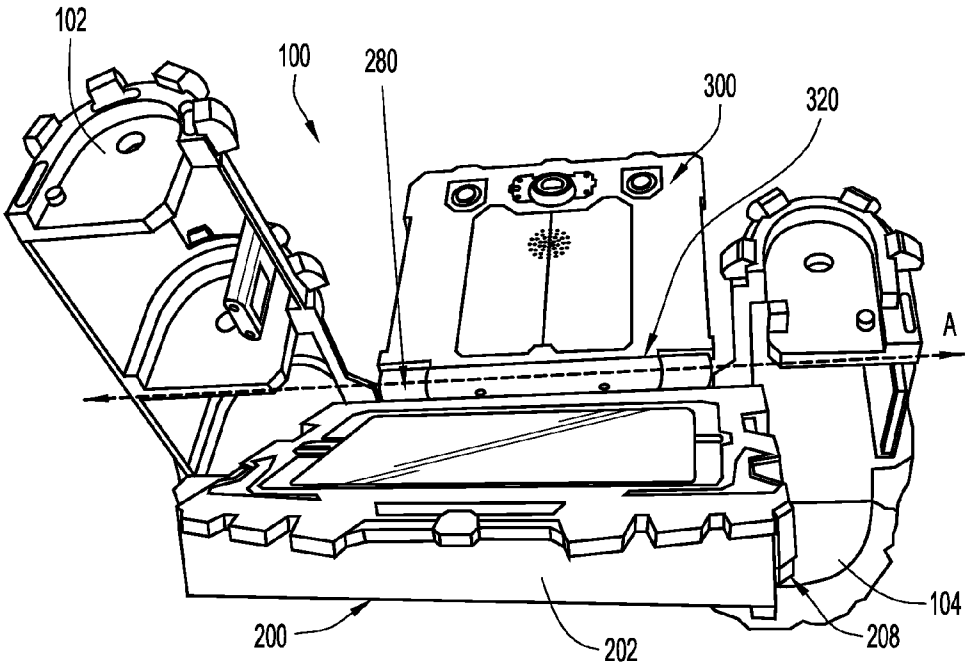

102
100
280
300
320
A
104
200
202
208

FIG.4

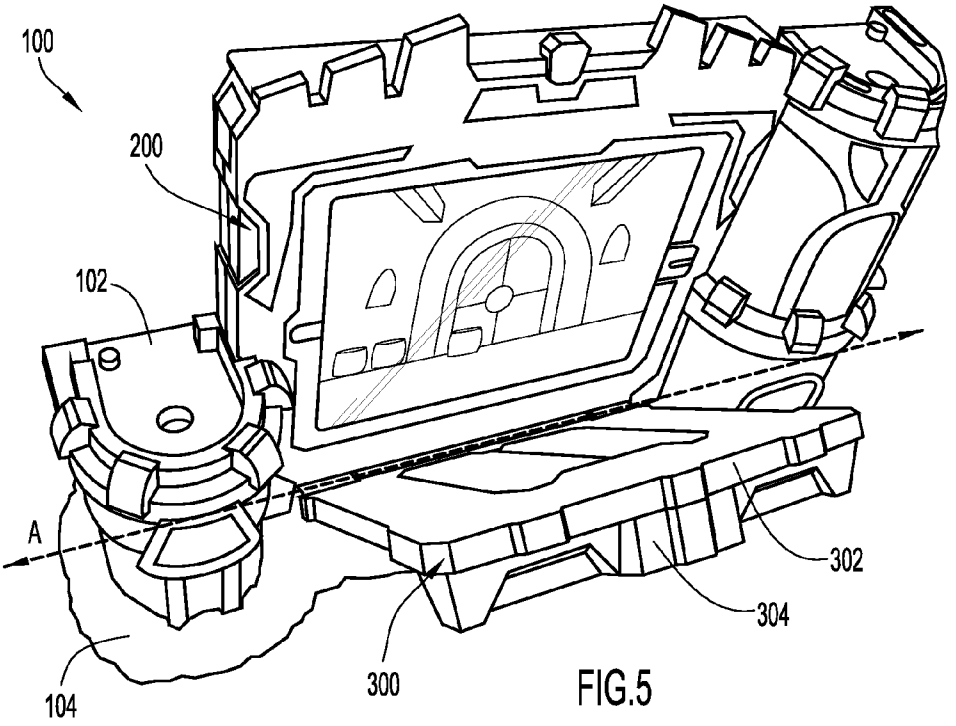

100
200
102
A
302
304
300
104

FIG.5

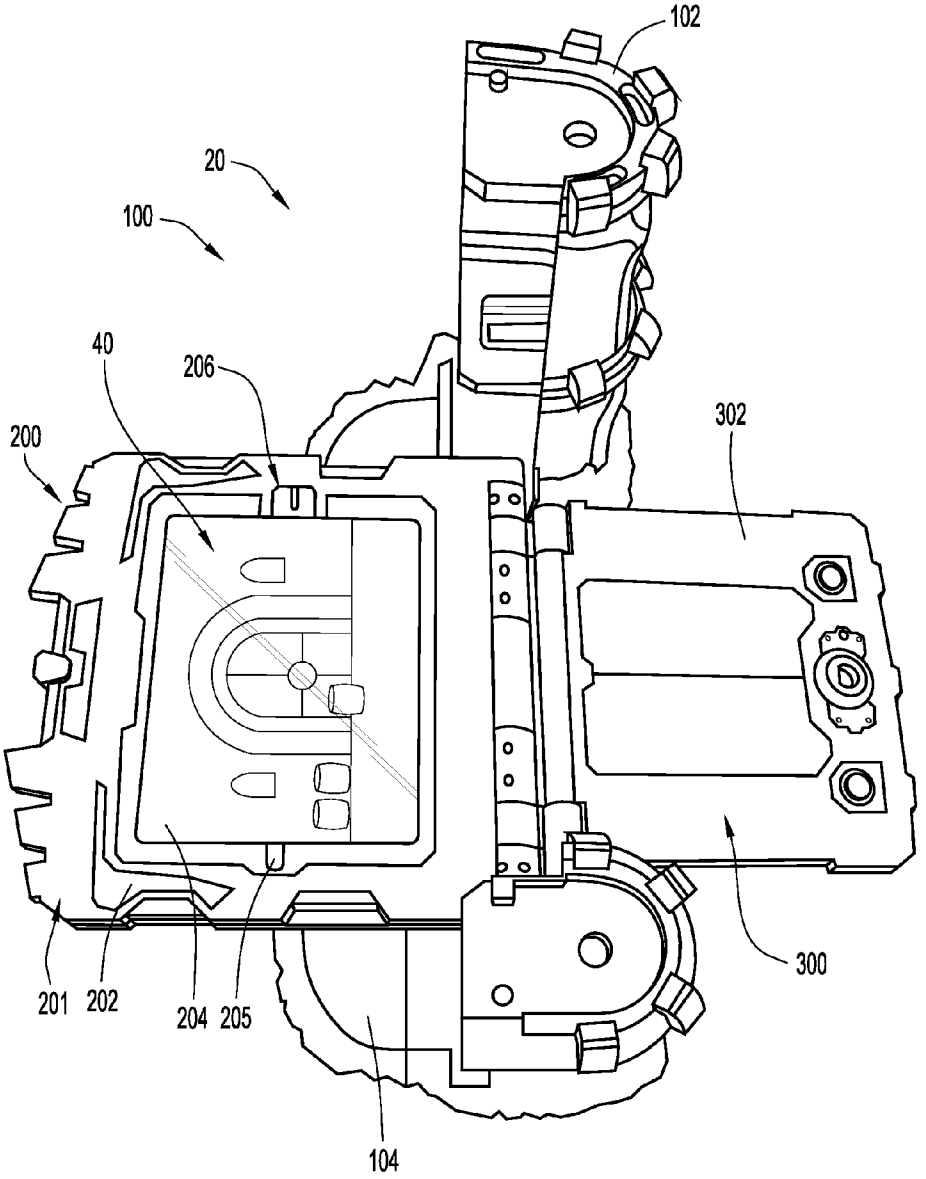


FIG.6

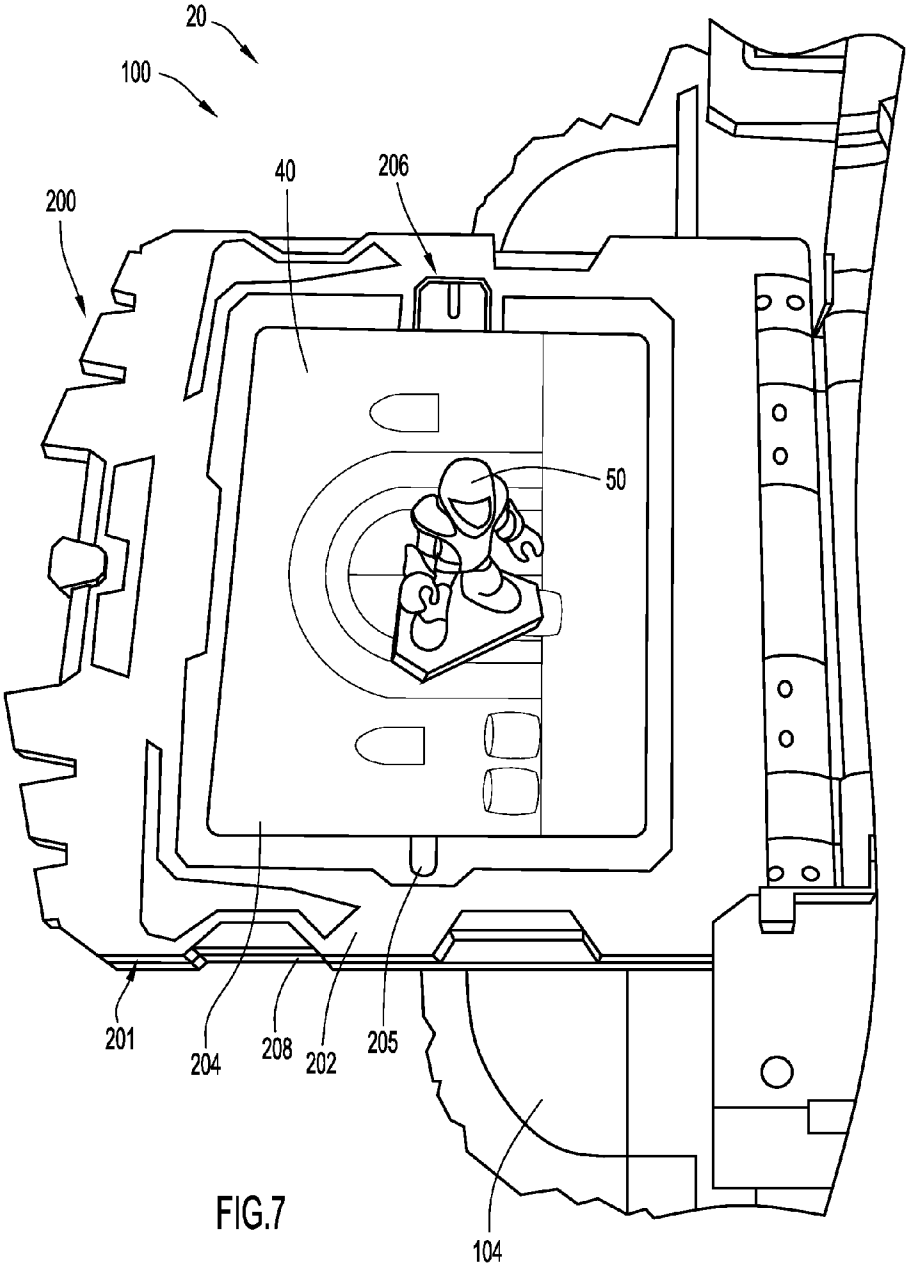


FIG.7

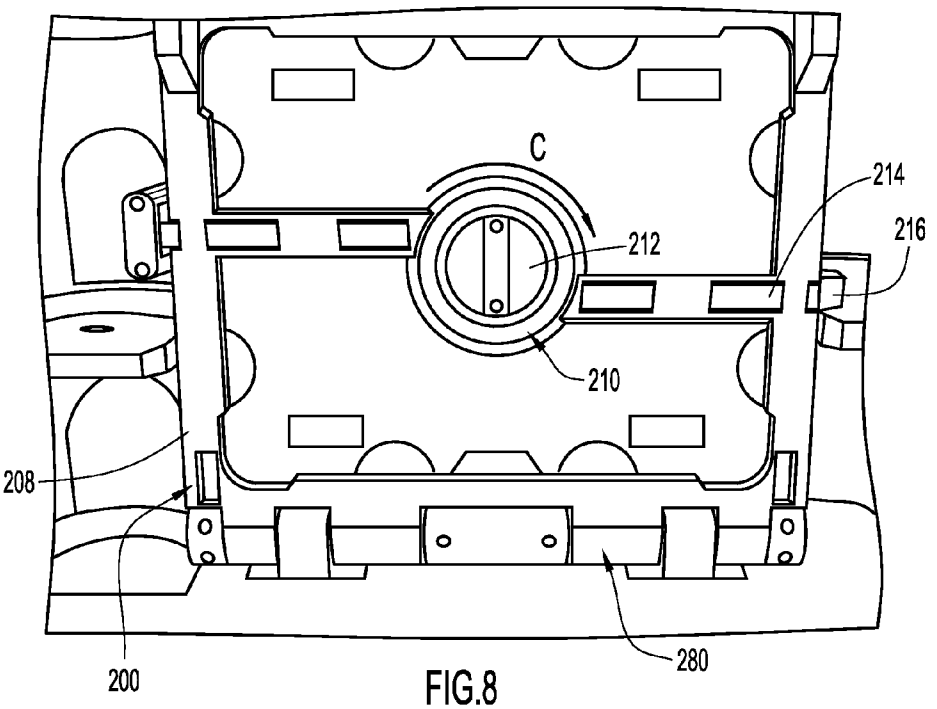


FIG.8

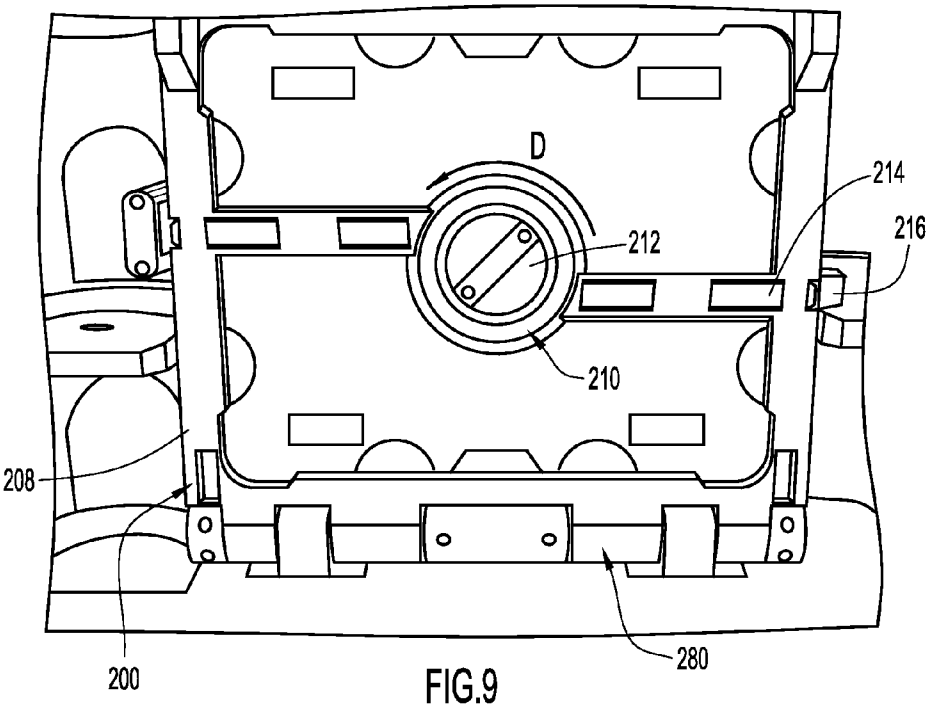


FIG.9

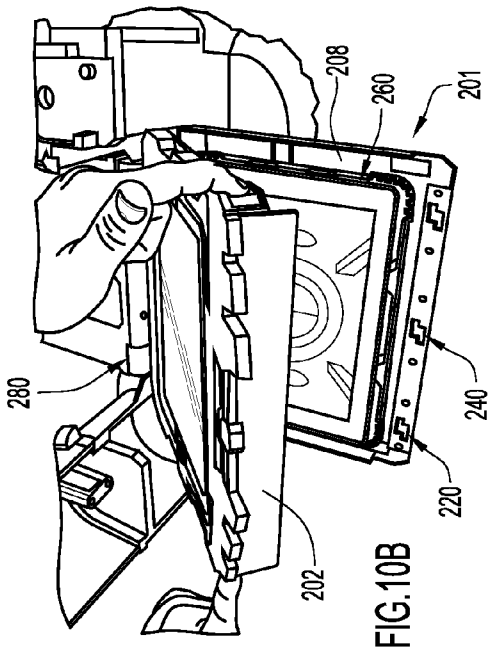


FIG.10B

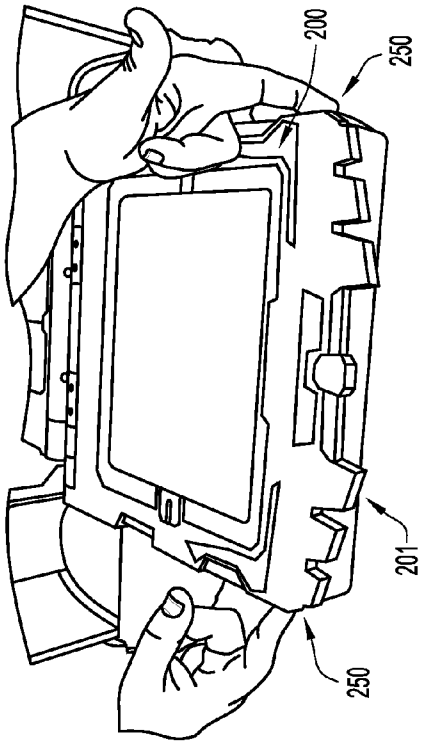


FIG.10A

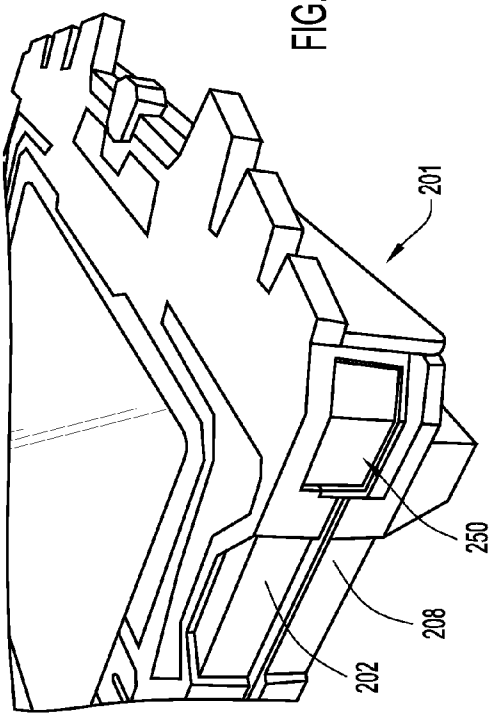


FIG.11

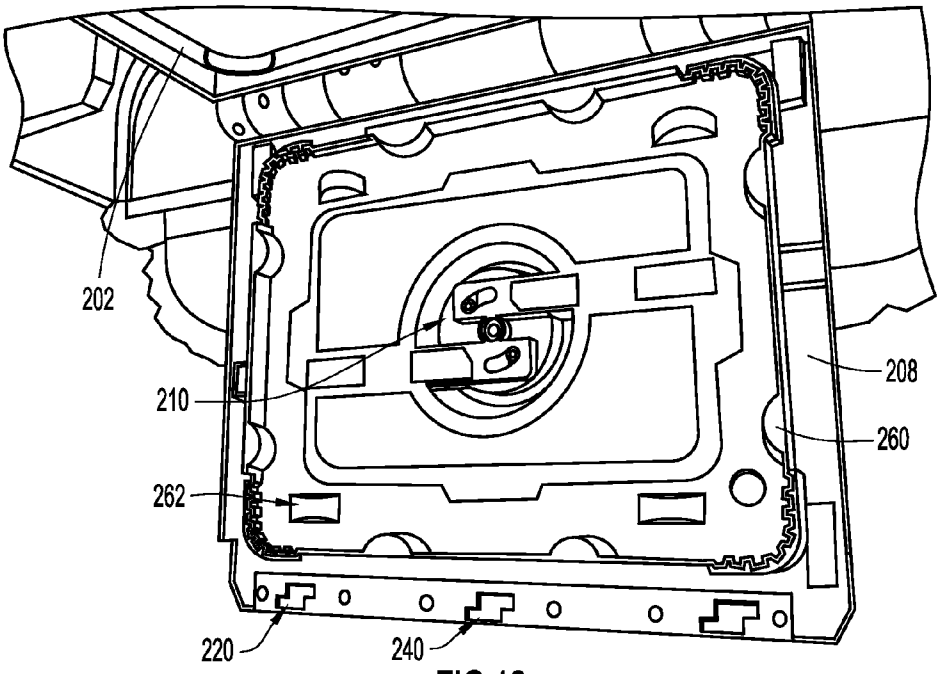


FIG.12

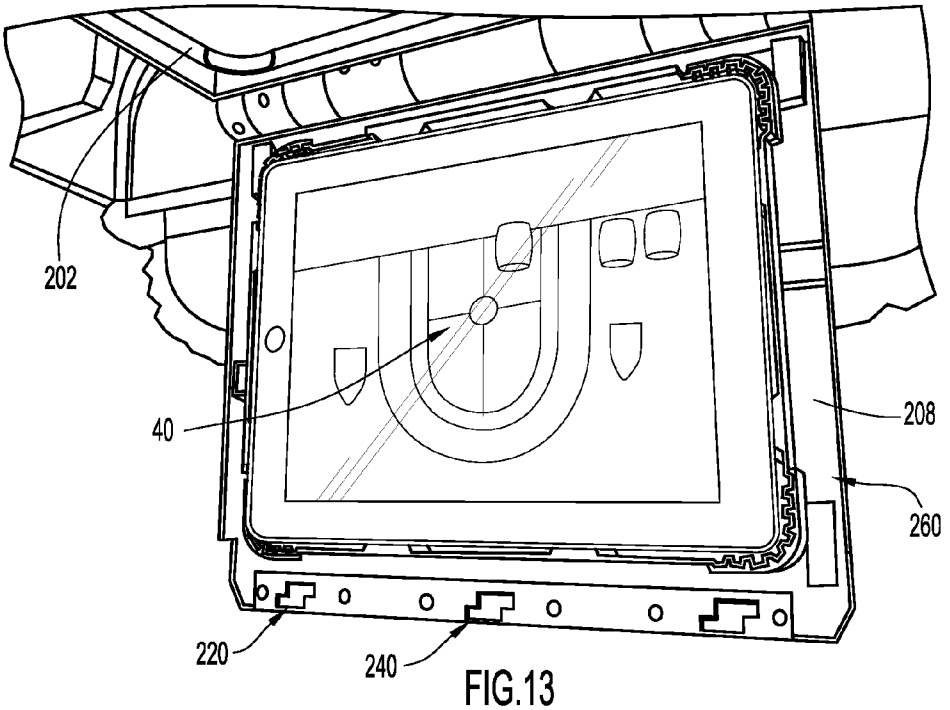


FIG.13

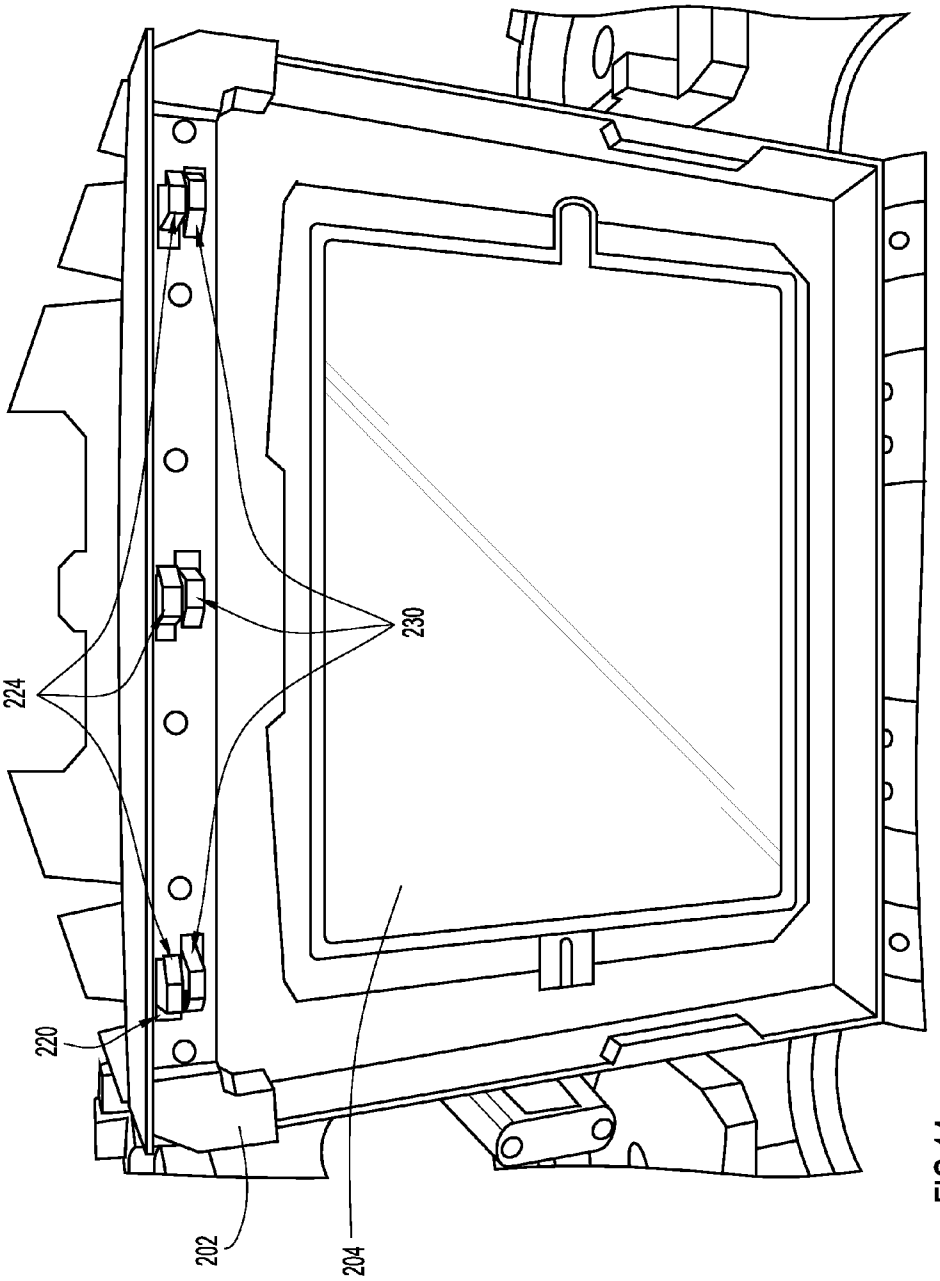


FIG.14

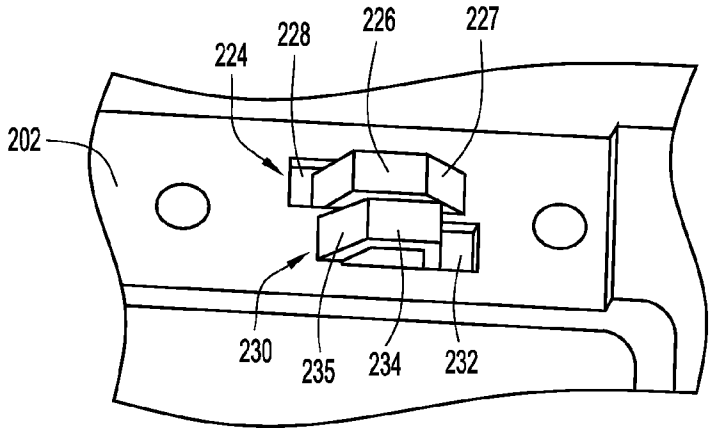


FIG.15A

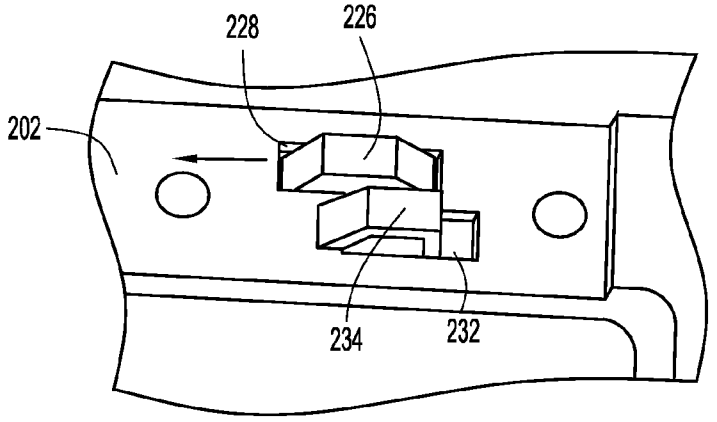


FIG.15B

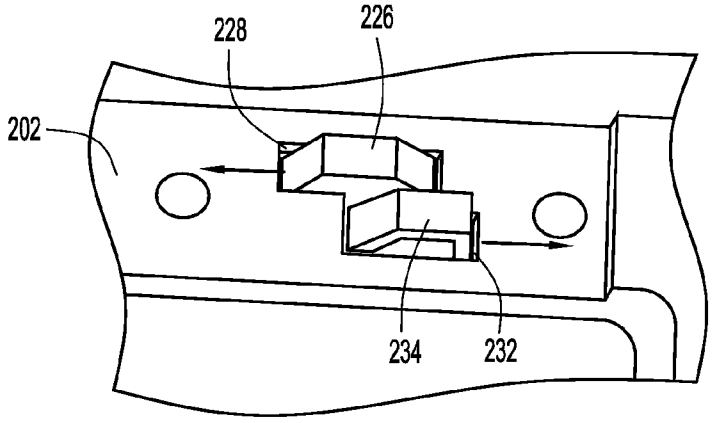


FIG.15C

FIG.16A

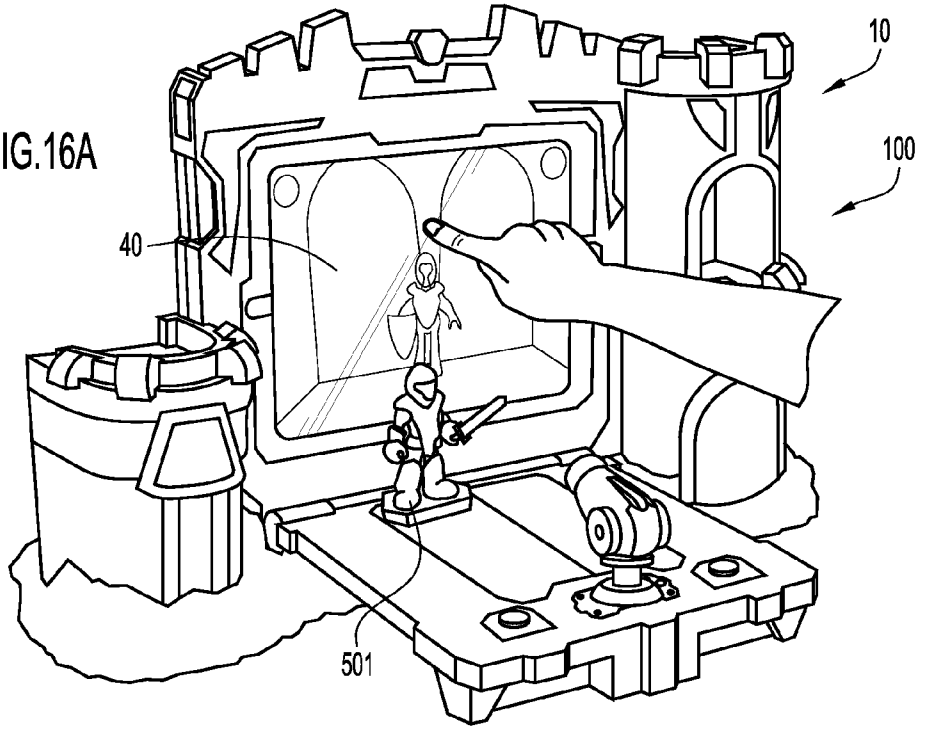
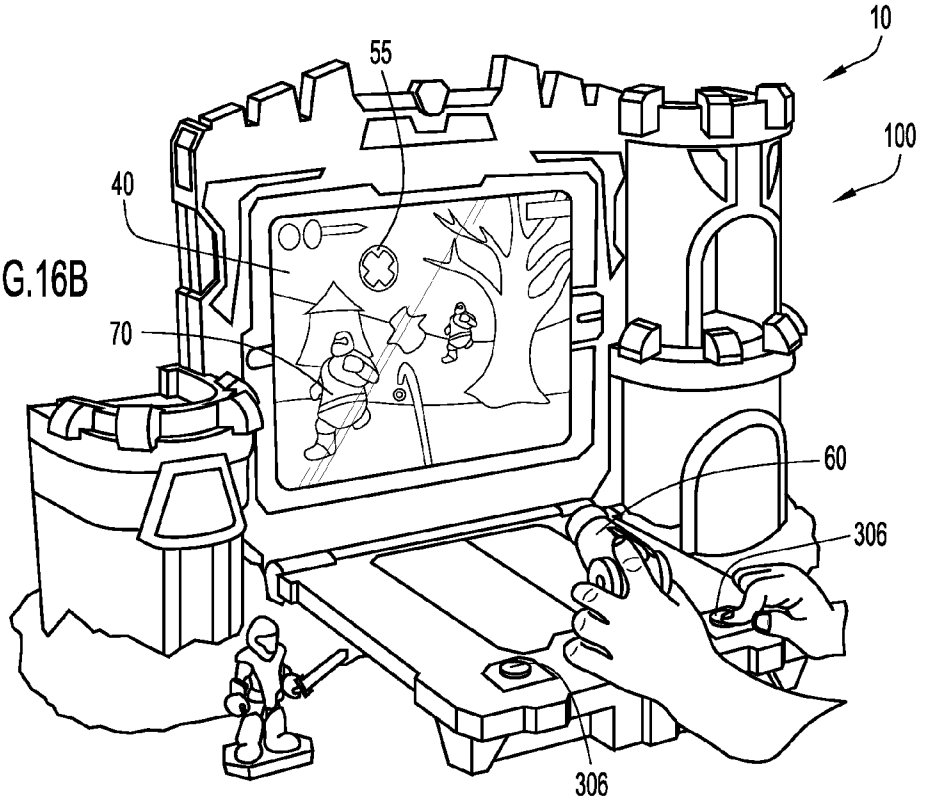


FIG.16B



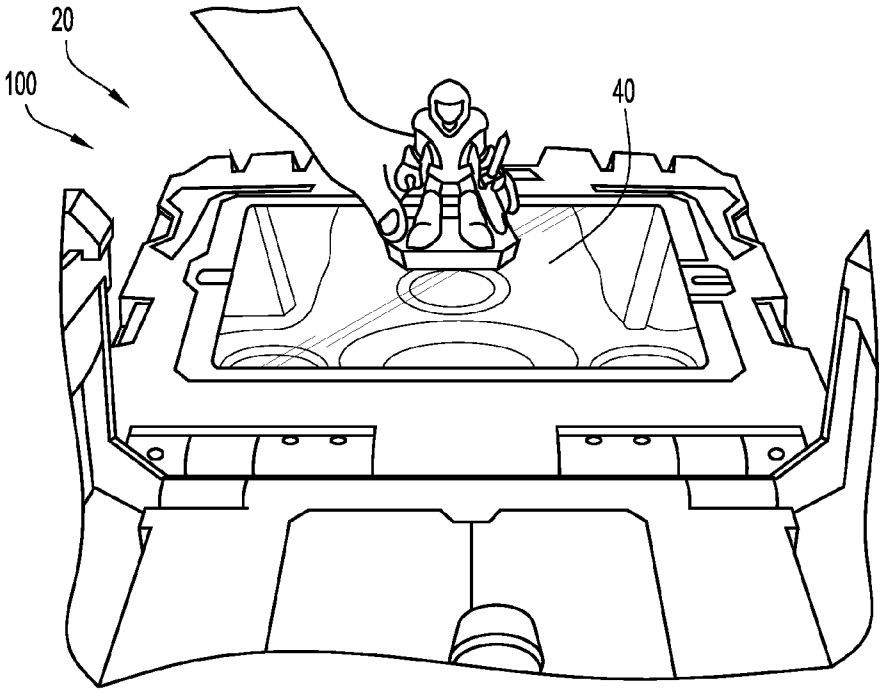


FIG.17A

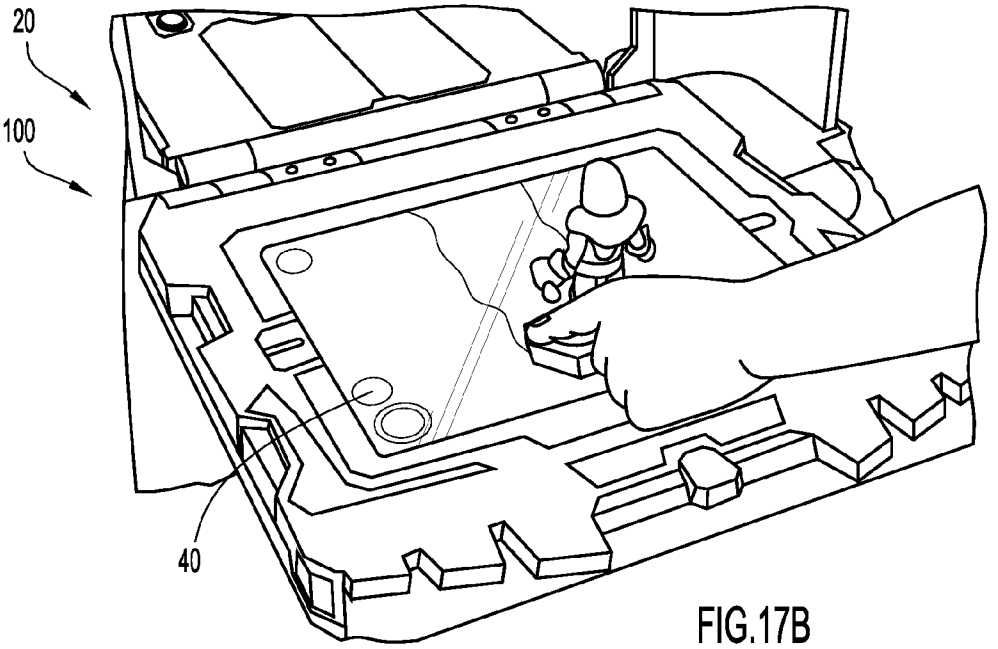


FIG.17B

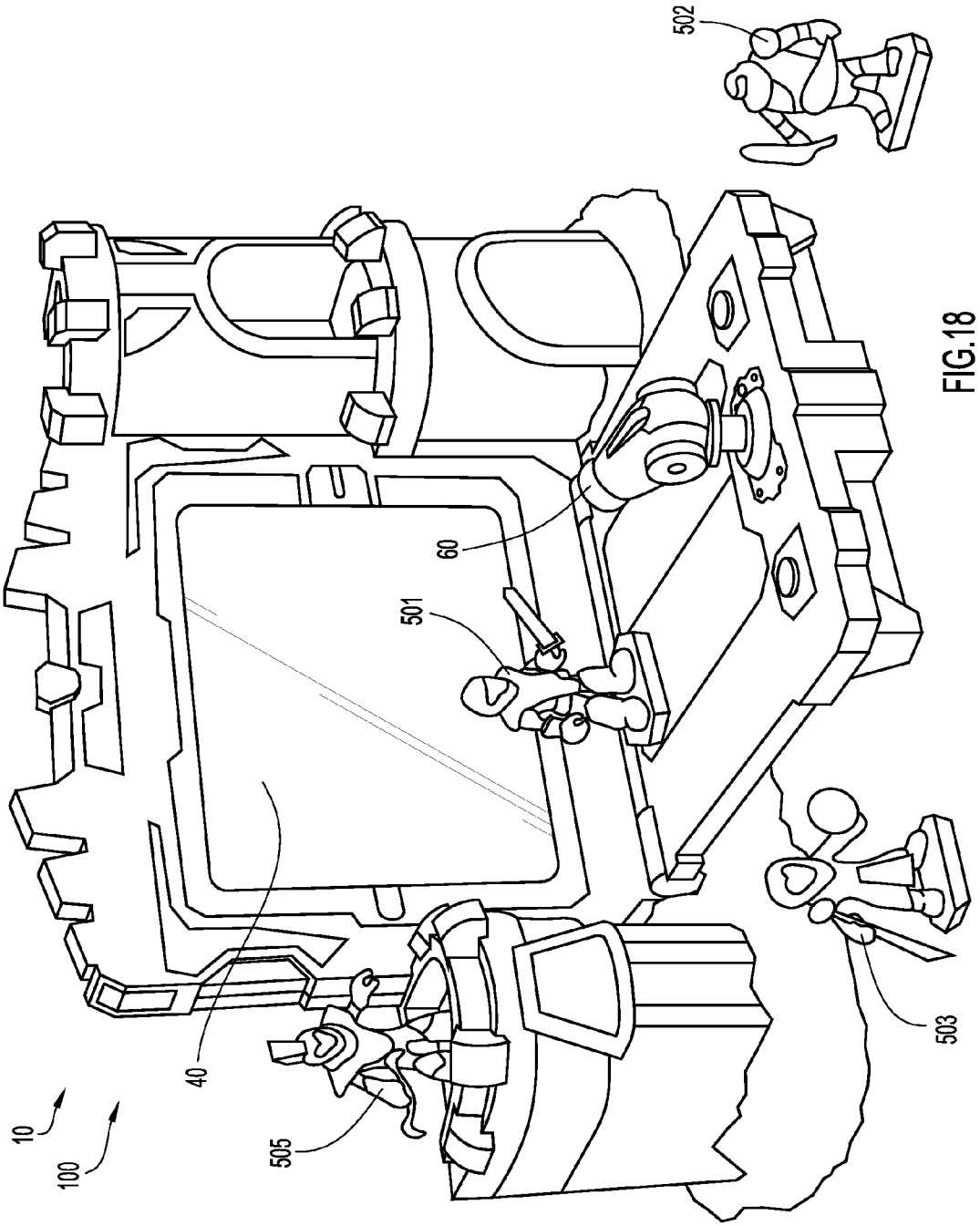


FIG.18

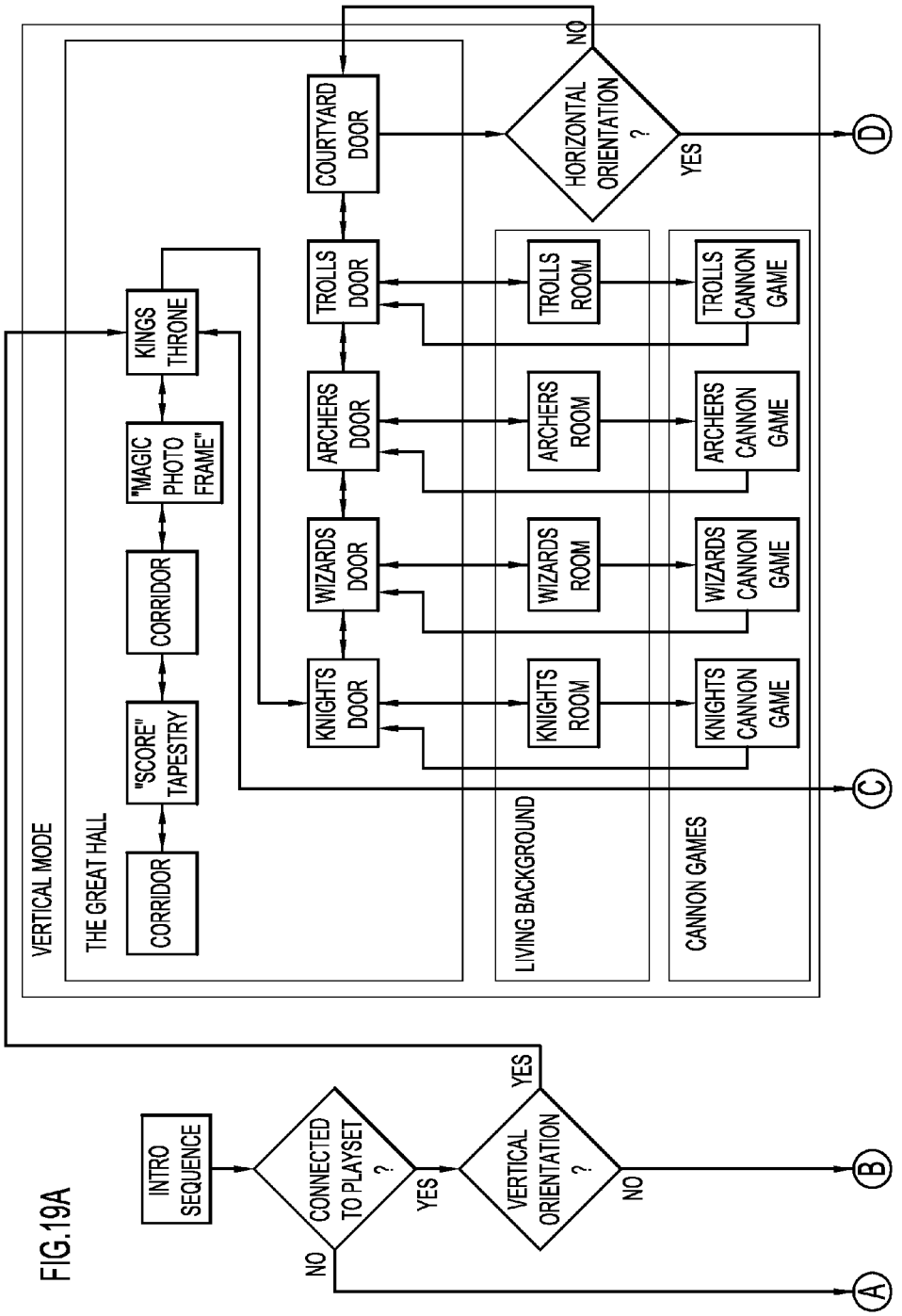

INTRO SEQUENCE
CONNECTED TO PLAYSET ?
NO
YES
VERTICAL ORIENTATION ?
YES
NO
A
B
C
D
VERTICAL MODE
THE GREAT HALL
CORRIDOR
"SCORE" TAPESTRY
CORRIDOR
"MAGIC PHOTO FRAME"
KINGS THRONE
KNIGHTS DOOR
WIZARDS DOOR
ARCHERS DOOR
TROLLS DOOR
COURTYARD DOOR
HORIZONTAL ORIENTATION ?
NO
YES
LIVING BACKGROUND
KNIGHTS ROOM
WIZARDS ROOM
ARCHERS ROOM
TROLLS ROOM
CANNON GAMES
KNIGHTS CANNON GAME
WIZARDS CANNON GAME
ARCHERS CANNON GAME
TROLLS CANNON GAME

FIG.19A

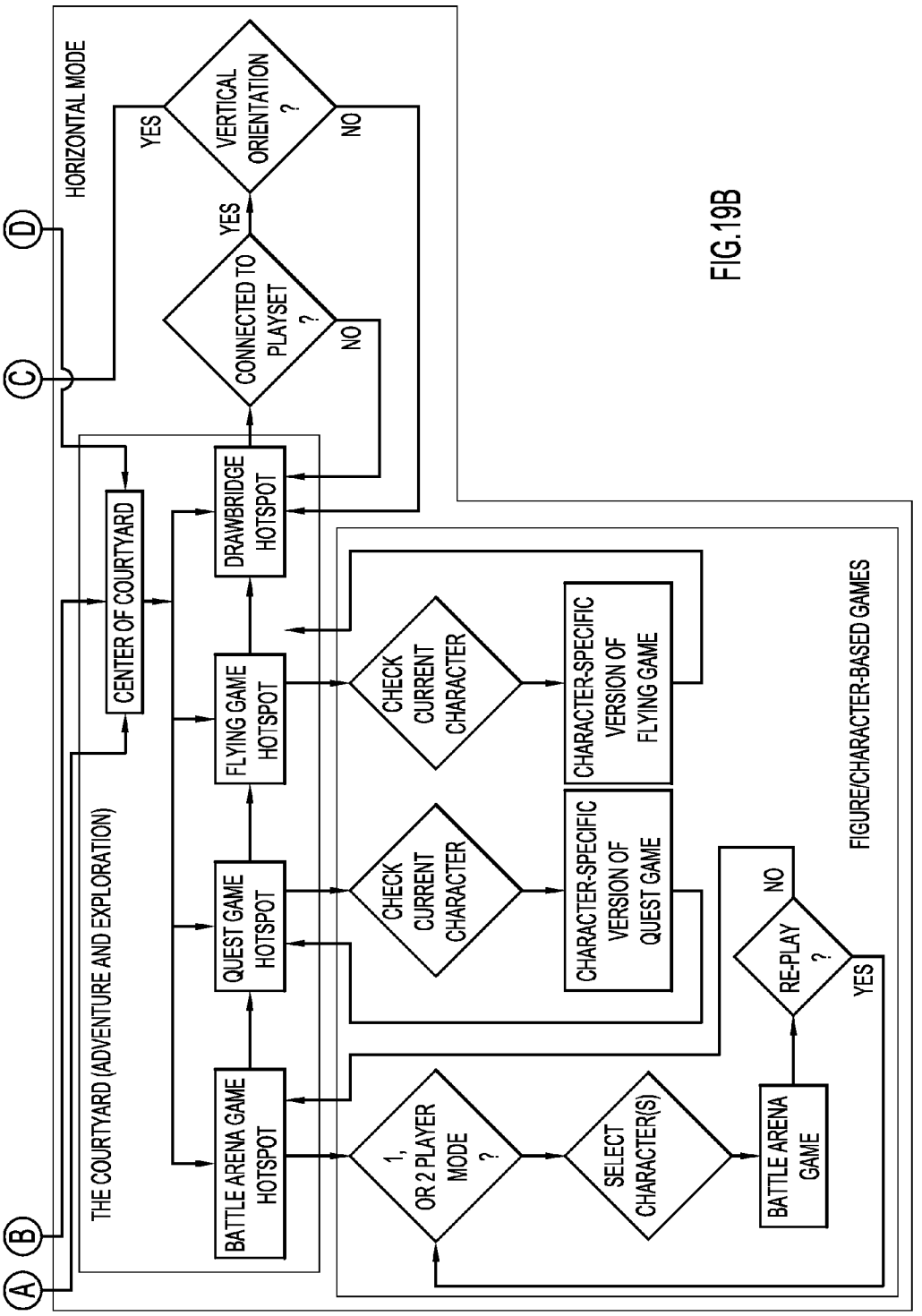

A
B
C
D
HORIZONTAL MODE
THE COURTYARD (ADVENTURE AND EXPLORATION)
FIGURE/CHARACTER-BASED GAMES
CENTER OF COURTYARD
BATTLE ARENA GAME HOTSPOT
QUEST GAME HOTSPOT
FLYING GAME HOTSPOT
DRAWBRIDGE HOTSPOT
CONNECTED TO PLAYSET ?
YES
NO
VERTICAL ORIENTATION ?
YES
NO
1, OR 2 PLAYER MODE ?
SELECT CHARACTER(S)
BATTLE ARENA GAME
RE-PLAY ?
NO
YES
CHECK CURRENT CHARACTER
CHARACTER-SPECIFIC VERSION OF QUEST GAME
CHECK CURRENT CHARACTER
CHARACTER-SPECIFIC VERSION OF FLYING GAME

FIG.19B

TOY PLAY SET WITH MULTIPLE MODES AND A HOUSING FOR A PORTABLE ELECTRONIC DEVICE

CROSS-REFERENCE TO RELATED APPLICATION

[0001] This application claims priority to and is based on U.S. Patent Application No. 61/749,030, filed Jan. 4, 2013, Attorney Docket No. 0621.2035P, entitled "A Toy Play Set with Multiple Modes and a Housing for a Portable Electronic Device," the entire disclosure of which is incorporated herein by reference in its entirety.

FIELD OF THE INVENTION

[0002] The present invention relates to a toy play set. More particularly, the present invention relates a play set for toys, such as figurines, that can be used in conjunction with a portable electronic device ("PED"). The present invention also relates to a play set that includes a movable or reconfigurable housing for a PED, the housing being movable into multiple configurations or orientations within the play set.

BACKGROUND OF THE INVENTION

[0003] As touch-based or touchscreen technology has become more prevalent in society, the range of users for the same technology has dramatically increased. In fact, many touch-based tablets and apps are now created explicitly for children. Some of these touch-based devices are configured to detect an object (e.g. a stylus) or a user's finger in order to increase the play value of the touch-based device and some devices may even recognize certain toy objects. One example of a touch based device that recognize toy objects is described in more detail in U.S. patent application Ser. No. 13/053,550, filed on Mar. 22, 2011, entitled Electronic Device and the Input and Output of Data (now U.S. Publication No. 2011/0227871 A1), which is hereby incorporated by reference in full.

[0004] Although many touch based devices have been successfully configured or adapted for use by children, many touch based PEDs are still fragile and easy to break. Thus, many PEDs must be kept in a case or cover when a child is using the PED. In order to increase the play value of cases and covers for touch screen PEDs, some cases and covers have incorporated additional play features or designs. However, the play features of the cases and covers do not always interact with the play included on the touch screen device and frequently confine touchscreen PEDs to one configuration within the case or cover. In other words, once a PED is placed in a case or cover, the PED device may not be moved within the cover or case. Thus, a toy play set with multiple modes that includes a movable or reconfigurable housing for a PED is desired.

SUMMARY

[0005] According to at least one embodiment of the present invention a toy play set includes a support structure, a first movable portion, and a second movable portion. The first movable portion defines a housing configured to receive a portable electronic device and the first and second movable portions are movably coupled to the support structure and movable between a first configuration and a second configuration. The first movable portion is in an upright orientation in the first configuration and a flat orientation in the second configuration and the portable electronic device is configured to provide different game modes depending at least upon the orientation of the first movable portion.

[0006] In some embodiments of the above toy play set, the second movable portion is in a flat orientation in both the first configuration and the second configuration. In other embodiments, the first and second movable portions are rotatable between the flat orientation and the upright orientation with respect to the support structure. In yet other embodiments, the second movable portion also includes controls electronically coupled to the portable electronic device. In some of these embodiments, the controls include at least one of a movement sensing assembly or buttons.

[0007] In yet other embodiments of the above play set, the game mode provided by the portable electronic device is further dependent upon the detected presence of a certain character or object. In some of these embodiments, the toy play set is operable in at least a first game mode or a second game mode when in the first configuration and a third or fourth game mode when in the second configuration, wherein the first and second game modes are only accessible when the portable electronic device is electronically coupled to the playset. For example, in embodiments where the second movable portion includes controls electronically coupled to the portable electronic device, the second game mode is played via the controls. In embodiments where at least one of the first, second, third and fourth games modes includes character-specific sub modes, each of the sub modes is initiated upon detection of a character. In yet other embodiments, the support structure includes a theme and the portable electronic device displays interactive images that match the theme of the support structure when in the first and third game modes. For example, the support structure may include a castle theme.

[0008] In still further embodiments, the first movable portion includes a top and a bottom. The top and bottom form a housing for receiving the portable electronic device therebetween and the top and the bottom are selectively coupleable along at least one of their edges in order to selectively secure the portable electronic device within the housing. In some of these embodiments, the first movable portion also includes at least two actuators, the top and bottom only being decoupleable along at least one of their edges when more than one of the at least two actuators are actuated simultaneously.

[0009] According to another embodiment of the present invention, a toy play set includes a support structure and a housing. The support structure is configured to rest atop a support surface and includes at least one feature configured to receive a toy accessory. The housing is configured to removably receive a portable electronic device and is movably coupled to the support structure and movable with respect to the support structure between a flat orientation and an upright orientation.

[0010] In some embodiments of the above toy play set, the support structure and housing include a theme and the portable electronic device is configured to display images or games which match the theme when the portable electronic device is received within the housing. In other embodiments, the portable electronic device is configured to provide at least a first play mode in the flat orientation and at least a second play mode in the upright orientation, the first play mode being different from the second play mode. In still other embodiments, the housing is a first movable portion and the toy play set also includes a second movable portion. The second mov-

able portion also being movably coupled to the support structure and including controls to allow a user to interact with the portable electronic device.

[0011] According to another exemplary embodiment of the present invention, a housing for a portable electronic device includes a top including at least two lateral edges, a bottom hingedly coupled to the top at a first lateral edge, at least two actuators, and a hinge coupled to a toy play set. The bottom is removably securable to the top via a locking mechanism at a second lateral edge and the top and bottom are configured to receive the portable electronic device therebetween. In order to release the locking mechanism and decouple the second lateral edge of the bottom from the top, more than one of the at least two actuators must be actuated simultaneously. The hinge allows the housing for the portable electronic device to be rotatably coupled to the toy play set along the first lateral edge so that the housing is rotatable between a flat orientation and an upright orientation.

[0012] Some embodiments of the above housing are configured to be electronically coupled to the portable electronic device when the portable electronic device is received therein. In other embodiments, the top also includes a cover and a slot. The cover is biased in a first position that aligns the cover to cover a home button of a portable electronic device when the portable electronic device is oriented in a first direction within the housing. The cover is selectively retractable to a second position which reveals the home button. The slot is alignable with the home button in order to expose the home button when the portable electronic device is oriented in a second direction within the housing.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] FIG. **1** shows a perspective view of an exemplary embodiment of a play set in a first or upright configuration, in accordance with the present invention.

[0014] FIG. **2** shows a perspective view of a portion of the exemplary embodiment shown in FIG. **1**.

[0015] FIG. **3** shows a perspective view of an object that may be used with the exemplary embodiment shown in FIG. **1**.

[0016] FIGS. **4-5** show perspective views of the exemplary embodiment shown in FIG. **1** between configurations.

[0017] FIG. **6** shows a perspective view of the exemplary embodiment shown in FIG. **1** in a flat or second configuration.

[0018] FIG. **7** shows a perspective view of a portion of the exemplary embodiment shown in FIG. **6** with an exemplary toy figurine placed thereon.

[0019] FIGS. **8-9** show rear views of the portion of the exemplary embodiment shown in FIG. **7**.

[0020] FIGS. **10***a*, **10***b*, and **11** show perspective views of the portion of the exemplary embodiment shown in FIG. **7**.

[0021] FIGS. **12-13** show perspective views of a bottom of the portion of the exemplary embodiment shown in FIG. **7**.

[0022] FIG. **14** shows a perspective view of a top of the portion of the exemplary embodiment shown in FIG. **7**.

[0023] FIGS. **15***a-c* show front views of a portion of the top of FIG. **14**.

[0024] FIG. **16***a-b* show perspective views of the play set of FIG. **1** in a first or upright configuration, in accordance with the present invention.

[0025] FIG. **17***a-b* show perspective views of the play set of FIG. **1** in a second configuration, in accordance with the present invention.

[0026] FIG. **18** shows a perspective view of the play set of FIG. **1**, including multiple figurines that may be used with the play set.

[0027] FIG. **19** shows a flow chart of the exemplary play modes for a toy play set with multiple modes and a housing for an electronic device, in accordance with the present invention.

[0028] Like reference numerals have been used to identify like elements throughout this disclosure.

DETAILED DESCRIPTION OF THE INVENTION

[0029] Generally referring to FIGS. **1-19**, at least one exemplary embodiment of a toy play set with multiple modes and a housing for a PED is shown. The play set may include a housing configured to receive a PED and a support structure configured to support the housing in multiple configurations. A PED that is disposed within the housing may be programmed to function in different modes based on at least orientation with respect to the support structure and/or the presence of different objects or toys on the device or the play set.

[0030] Referring first to FIG. **1**, an exemplary play set **100** is shown. The play set may include a support structure **102** with various platforms **108** and mounting points **106**, to increase the play value of the play set **100** when it is used without a portable electronic device. The support structure also includes a base **104** in order to stabilize the play set **100** regardless of its configuration. The support structure **102** may also support at least two movable portions, including a first movable portion **200** and a second movable portion **300**.

[0031] Still referring to FIG. **1**, each of the movable portions **200**, **300** may house or provide a housing for various electronics and may be movable between a substantially upright or vertical orientation and a substantially flat or horizontal orientation. For example, in FIG. **1**, the play set is in a first configuration **10** with the first movable portion **200** being in an upright orientation and the second movable portion **300** being in a flat orientation. Also, in FIG. **1**, the first movable portion **200** includes a housing **201** for a PED **40**, while the second movable portion **300** includes various controls, such as buttons **306** and a movement sensing assembly **310** configured to receive an object **60**. The second movable portion **300** may also include and electronics to electronically couple any controls included therein to the portable electronic device.

[0032] In some embodiments, the electronics included in the second movable portion **300** may be electronically coupled to the PED **40** housed in the first movable portion **200**. In the exemplary embodiment shown in FIG. **1**, the buttons **306** and movement sensing assembly **310** may be linked to the PED **40** via a dongle that is inserted into a headphone jack included in the PED **40**. However, in other embodiments, electronics included in movable portion may linked to PED **40** via any desirable method (wired or wireless) such that when a PED **40** is mounted or housed within the first movable portion **200**, a user may communicate with the PED **40** via controls included on second movable portion **300**, such as buttons **306** and movement sensing assembly **310**. In some embodiments, the necessary wires and couplings to provide such a connection may be included in play set **100**.

[0033] Now referring to FIGS. **2-3**, with continued reference to FIG. **1**, the movement sensing assembly **310** and object **60** are shown in closer detail. As seen in FIGS. **1** and **2**, the second movable portion **300** may include a housing **302**

and a stand **304**. The top surface of the housing **302** may include an aperture **308** and a receiver **312** may be housed or rotatably mounted within aperture **308**. A movement sensor (not pictured) may be disposed substantially beneath or within receiver **312** and may be configured to sense or track the movement of receiver **312**. Thus, movement sensing assembly **310** may, in essence, allow an object to communicate with a movement sensor. For example, an object **60** may be inserted into a receiver **312**, such that movement of the object may control movement of the receiver **312**. In the exemplary embodiment shown in FIGS. **1-3**, object **60** is shaped as cannon, but it is to be understood that object **60** may be any desirable shape or size which allows object **60** to function in accordance with the scope of the present invention. In fact, in some embodiments, a user may even use a finger to manipulate receiver **312**.

[0034] Still referring to FIGS. **2-3**, in order ensure that the receiver **312** follows the movements of object **60**, including both rotational and lateral movement, receiver **312** may include a cavity **314** with at least one flat wall and object **60** may include insertable section **65** with substantially the same shape. Although FIG. **3** does not clearly show the cross-sectional area of insertable section **65**, at least a portion of section **65** (the lowermost portion in FIG. **3**) may be shaped substantially the same as cavity **314**, such that insertable section **65** may prevent object **60** from simply spinning within cavity **314** when object **60** is disposed therein. The flat side of cavity **314** and insertable section **65** may also assist users in aligning the object **60** as intended. Although the cavity **314** and insertable section **65** are shown to be substantially circular with a flat side, it is to be understood that cavity **314** and insertable section **65** may be shaped as desired so long as that when insertable section **65** is inserted into cavity **314**, receiver **312** moves with object **60**.

[0035] Now turning to FIGS. **4-5**, two perspective views of play set **100** are shown and illustrate at least a portion of the range of motion of each movable portion **200** and **300**. In FIG. **4**, the first movable portion **200** is shown between an upright orientation and a flat orientation while in FIG. **5**, the second movable portion **300** is shown between an upright orientation and flat orientation. Both movable portions **200** and **300** may be pivotably coupled to the support structure **102**, such as by hinges **280** and **320**, respectively, such that each movable portion **200**, **300** may rotate, at least partially, about an axis parallel to or contiguous with base **104**, such as axis A. However, in other embodiments, hinges **280** and **320** may be coupled to support structure **102** at separate locations, such that each movable portion may rotate about a separate axis.

[0036] In the exemplary embodiment shown in FIGS. **4-5**, since each portion **200**, **300** is mounted to the support structure **102** along the same axis, each movable portion **200**, **300** may limit the range of the other movable portion. Alternatively or additionally, the range of motion of each portion **200**, **300** may also be limited by parts of portions of the support structure **102**, such as the innermost edges of the towers included in the exemplary embodiment shown in FIGS. **4-5**, wherein innermost simply denotes the edges disposed closest to the support structure **102**. However, it is to be understood that movable portions **200**, **300** may at least rotate ninety degrees, from an upright orientation to a flat orientation, such that the play set **100** may move between configuration **10** (see FIG. **1**), configuration **20** (see FIG. **6**), and a folded configuration (not pictured). In the folded configuration, both movable portions **200**, **300** may be in substantially upright orientations.

[0037] Still referring to FIGS. **4-5**, FIG. **4** provides a partial top view of the first movable portion **200** while FIG. **5** provides a partial top view of the second movable portion **300**. As can be seen in FIG. **4**, housing **201** may include a top or front portion **202** and a bottom or rear portion **208**. The uppermost portion of top **202** may substantially overlap or hang over bottom **208**, such that a portion of top **202** may serve as a stand or platform when the first movable portion **200** is in a flat orientation, such as when play set **100** is in the second configuration **20**. Similarly, as shown in FIG. **5**, housing **302** includes a stand **304** that may serve as a stand or platform when the second movable portion **300** is in a flat orientation.

[0038] Thus, in embodiments where movable portions **200** and **300** are rotatably coupled to support structure **102** at a position elevated above the surface that the support structure **102** is resting upon, movable portions **200**, **300** may actually be flat when disposed in a flat or horizontal orientation. In other embodiments, such as those where movable portions **200**, **300** are rotatably coupled to support structure **102** in a non-elevated orientation with respect to the surface that support structure **102** is resting upon, the overhanging portion of top **202** and the stand **304** may be omitted from the first and second movable portions **200**, **300**, respectively. In still further embodiments, the overhanging portion of top **202** and stand **304** may be sized as desired so that movable portions **200**, **300** may be disposed at desirable angles when either is disposed in a flat configuration, such as second configuration **20**.

[0039] Now turning to FIGS. **6-7**, the play set **100** is shown in the second configuration **20**. In the second configuration **20**, both the movable portions **200**, **300** are substantially horizontal or flat. Thus, in configuration **20**, a PED **40** housed within housing **201** may be substantially parallel to the support surface that the play set **100** is resting on, such that objects or toys may rest on top of PED **40**. In order to protect the protect PED **40**, the top **202** of housing **201** may include a protective film **204** which prevents scratches but allows conductive touches to still be sensed by the PED **40**. Preferably, the film **204** is simply thin enough to allow the conductive sensing of the PED **40** to work through the film **204**. Thus, when a conductive figurine **50** is placed on top of housing **201**, as is shown in FIG. **7**, the PED **40** may be protected from damage, but may still be able to sense that the conductive figurine is "touching" the PED **40**.

[0040] As can also be seen in FIGS. **6-7**, housing **201** may also include a retractable cover **206** and a slot **205** disposed on opposite lateral edges of top **202**. These features may allow a "home" button included on a PED **40** to either be selectively protected or accessible, as desired, depending on the orientation of the PED **40**. In other words, cover **206** and slot **205** may allow a parent to set up a PED **40** for their child, with or without restricting access to other programs or software applications included on the PED **40**.

[0041] For example, if a parent wants the home button to be covered, the parent may place the PED **40** in tray **260** so that the home button is aligned with cover **206**. In some embodiments, cover **206** may be biased in a covering position so that cover **206** may also serve as a child lock, as desired. If biased, the cover **206** must be held in a retracted position in order to press the home button and the cover **206** will automatically move back into a covering orientation once released. On the

other hand, if a parent is comfortable with their child having access to the home button, the parent may rotate the PED **180** degrees to align the "home" button with slot **205**, such that the "home" button is still accessible when PED **40** is in play set **100**. Alternatively, if a child is old enough to operate retractable cover **206** but still wants the home button of a PED **40** to be covered to prevent it from being accidentally pushed, the home button may be aligned with cover **206** for convenience. Additionally, the slot **205** and cover **206** may allow the PED's camera or light sensor to be selectively or permanently exposed for at least some PED's, such as those PED's which include a camera or light sensor at an edge opposite the home button, as the camera or light sensor will be aligned with the slot **205** or cover **206** that is not disposed over the home button.

[0042] Referring now to FIGS. **8-9**, the bottom **208** of housing **201** is shown from a rear perspective. As can be seen in FIGS. **8-9**, the bottom **208** includes a locking mechanism **210** that may secure the first movable portion **200** in an upright orientation—the orientation that the first movable portion **200** is disposed in when the play set is in the first configuration **10**. The locking mechanism **210** includes a rotatable knob **212** coupled to two elongate members **214**. When extended or locked, each elongate member **214** may extend into a housing **216** included on support structure **102**, as seen in FIG. **8**. Upon being rotated, such as in direction "C," the elongate members **214** may retract or move inwards until the elongate members **214** are removed from housings **216**, as seen in FIG. **9**, thereby allowing first movable portion **200** to rotate freely about hinges **280**.

[0043] In some embodiments, the locking mechanism may be biased in a locking orientation (as seen in FIG. **8**) or an unlocked orientation (as seen in FIG. **9**), but in the present embodiment, the locking mechanism **210** is not biased. Instead, the locking mechanism will remain in either a locked orientation or unlocked orientation until manually manipulated. Thus, once unlocked, a user must align the elongate members **214** with housings **216** and turn knob **212** in direction "D" in order to lock movable portion **200** in an upright orientation. However, it is to be understood that the housings **216** included in FIGS. **8-9** are merely exemplary and that, in other embodiments, housings **216** may be any desirable portion of support structure **102** that may retain a movable portion **200** or **300** in an upright position. For example, in some embodiments housings **216** may not receive elongate members **214** therein and, instead, may simply prevent elongate members **214** from moving in one direction (i.e. housing **216** may be a solid protrusion that an elongate member **214** can rest upon). Additionally, housing **216** may, in some embodiments, secure elongate members **214** in non-upright orientations, as desired.

[0044] Turning to FIGS. **10***a*-**10***b* and **11**, housing **201** is shown in further detail. As can be seen, housing **201** is formed from top **202** and bottom **208** such that an interior cavity shaped to receive a PED **40** is defined. In some embodiments, bottom **208** may also include a tray **260** to securely receive the PED **40**. Furthermore, the top **202** and bottom **208** may be rotatably coupled at one end (i.e. via hinges **280**) and may be selectively coupleable at the opposite end, such as by latches **220**. As will be addressed in more detail below, latches **220** may include at least two sets of movable projections **224**, **230** (see FIG. **14**) configured to selectively engage openings **240** in a manner which requires each set of projections **224**, **230** to move in an opposite direction in order to decouple top **202** from bottom **208**. Thus, in order to decouple top **202** from bottom **208**, two actuators **250** (best shown in FIG. **11**) must be engaged simultaneously. When both actuators **250** are engaged, a user may lift top **202** away from bottom **208**, as seen in FIGS. **10***a*-**10***b*. However, in some embodiments, the sets of projections **224**, **230** may be configured so that the top **202** and bottom **208** may be secured together without actuating any of the actuators **250**, as is described below.

[0045] As mentioned above, and as shown in more detail in FIGS. **12-13**, the interior side of bottom **208** may include a tray **260** configured to receive a PED **40**. A PED **40** may be inserted into tray **260** when top **202** and bottom **208** are separated from each other, and top **202** and bottom **208** may subsequently secured together around PED **40**, via latches **220** in order to form a protective case for the PED **40**. In order to securely receive the PED **40**, the tray **260** may include various stops, supports and spacers, as needed, such as support members **262**. Support members **262** may allow tray **260** to receive PEDs of various sizes and shapes and may ensure that the PED is secured tightly against the film **204** included in top **202**. Thus, when objects are placed on film **204**, the film **204** will not sag or otherwise deform.

[0046] Additionally, in some embodiments, tray **260** may be removable and/or reversible. As an example, tray **260** may be "reversible" by removing it and reinserting it with the supports **262** facing downwards (i.e. towards bottom **208**). Reversing the tray **260** in the absence of a PED **40** may provide a solid surface under film **204**, allowing the play set **100** to be used for play when a PED **40** is not available or installed within the play set **100** while still protecting film **204**. Additionally, in some embodiments, the housing **201** may not include a film **204** and reversing the tray may simply provide a play surface that is coplanar with the top surface of top **202**.

[0047] Now referring to FIGS. **14** and **15***a-c*, the sets of movable projections **224**, **230** that may be received within openings **240** are shown in more detail. As shown in FIG. **14**, each set of movable projections **224**, **230** may include three projections **226**, **234**, respectively, spaced along the length of the uppermost edge of top **202**. In some embodiments, each of these projections may be independent, but in the present embodiment, each of the projections **226**, **234** included in the sets of projections **224**, **230** is mechanically coupled to the other projections in that set, such that all projections **226**, **234** in a set of projections **224**, **230** may be actuated together. Thus, although only one projection from each set **224**, **230** is shown in FIGS. **15***a-c*, it is understood to be representative of the set of projections **224**, **230**. Further, in the present embodiment, for redundancy, each actuator **250** actuates one set of projections **224**, **230**, but in some embodiments, both sets of projections **224**, **230** may be actuated by one of the actuators **250**.

[0048] In FIGS. **15***a-c*, projections **226**, **234** are shown in closer detail. Each projection **226**, **234** extends from or through a slot **228**, **232** in the top surface of top **202** and is slidable therein. Each slot **228**, **232** may minor and substantially align with an opening **240** included on the bottom **208**, such that when top **202** is closed atop of bottom **208**, each pair of slots **228** and **232** may form one contiguous cavity with each opening **240**. Thus, if the entirety of the projection is disposed within its slot **228**, **232**, it may be received in the opening **240**. However, each projection **226**, **234** also includes a respective overhanging portion **227**, **235** that may extend over a lateral edge of its respective slot **228**, **232**. In

some embodiments, such as the one shown in FIGS. **15***a-c*, the projections **226**, **234** may be biased in an orientation where the overhanging portion **227**, **235** is extending past a lateral edge of its respective slot **228**, **232**. Thus, in order to insert, and subsequently lock the projections **226**, **234** within openings **240** the projections **226**, **234** must first be moved within slots **228**, **232**. This may be accomplished by actuating each set of projections **224**, **230**, by, for example, simultaneously actuating both actuators **250**.

[0049] When actuated, each projection **226**, **234** may slide away from one end of slot **228**, **232**, but while projection **226** may slide in a first direction, projection **234** slides in a second, opposite direction. In FIG. **15***a*, neither set of projections **224**, **230** is actuated, in FIG. **15***b*, set **224** is actuated, and in FIG. **15***b*, both set **224** and set **230** are actuated. As seen in FIGS. **15***b* and **15***c*, once actuated, projection **226** move in a first direction such that it is disposed substantially within slot **228**. Similarly, as shown in FIG. **15***c*, once projection **234** is actuated, projection **234** moves in a second direction such that it is disposed substantially within slot **232**.

[0050] Once both projections **226** and **234** are disposed within slots **228**, **232**, the top **202** may be lowered onto bottom **208**, inserting every projection **226**, **234** from sets **224**, **230** into openings **240**. In some embodiments, overhanging portions **235** and **227** may be angled or sloped so that even if the projections are disposed slightly exterior of their respective slots, the projections may still be inserted into openings **240**. Thus, even if the projections **226**, **234** are disposed slightly exteriorly of their respective slots **228**, **232**, the projections **226**, **234** may still, in some embodiments, be inserted into openings **240**. In other words, the projections **226**, **234** may automatically align with opening **240** when the top **202** and bottom **208** are closed together. Alternatively, each set of projections **226**, **234** may be moved within slots **240** by simultaneously actuating actuators **250**. Regardless, once projections **226**, **234** are inserted into openings **240**, actuators **250** may be released and the projections may return to their biased or non-actuated orientations (see FIG. **15***a*), locking top **202** to bottom **208**.

[0051] In order to remove or unlock top **202** from bottom **208**, the same steps may be taken in reverse. In short, the actuators **250** may be depressed, so that the projections **226**, **234** are aligned with the openings **240** such that the top **202** can be removed from the bottom **208**. However, in contrast with the steps for closing the housing **201**, the top **202** and bottom **208** may not simply be pulled apart without actuating the actuators **250**, thereby preventing or discouraging a child below a desired age from removing a PED **40** form the housing **201**.

[0052] Next, generally referring to FIGS. **16***a*-**19**, the various play modes of play set **100** are shown or illustrated. The PED **40** may determine which play mode to provide based on at least the orientation of the PED **40** and the presence of various objects or toys on the PED **40**. In order to sense orientation, a PED may utilize any motion, tilt, or orientation sensor included in the PED **40** that is capable of distinguishing between when the PED **40** is in an upright orientation or a flat orientation. For example, in FIGS. **16***a*, **16***b* and **18** the play set **100** is in first configuration **10**, so the PED **40** may provide vertical play modes, but in FIGS. **17***a* and **17***b*, the play set **100** is in second configuration **20**, so the PED **40** may provide flat or horizontal play modes. In some embodiments, the PED **40** may continue to provide play modes when it is disconnected from the playset **100** and oriented in similar positions to the position the PED **40** is oriented in in these configurations, but, preferably, the vertical play modes will only be available when the PED **40** is electronically coupled to the playset **100**.

[0053] In FIGS. **16**A, **16**B and **18**, the PED **40** is in an upright or vertical orientation and the PED **40** is electronically coupled to the playset **100**. Consequently, the play set **100** is in a first configuration **10**. However, in other embodiments, the PED **40** might not be electronically coupled to the playset **100** when in the first configuration **10** and the PED **40** may recognize that it is installed within the playset **100** in a vertical position in any desirable manner. In other words, while it is preferred that the PED **40** be electronically coupled to the playset **100** in the first configuration **10**, the playset **100** may be considered to be in its first configuration when configured substantially as shown in FIGS. **16**A, **16**B, and **18**, regardless of how or if the PED **40** is electronically connected thereto. When in the first configuration **10**, the PED **40** may provide at least two vertical play modes, such as "living backgrounds" mode (see FIG. **16***a*) and "cannon games" mode" (see FIG. **16***a*), and the specific vertical play mode provided may be dependent on objects detected by the playset **100** or PED **40** and/or user selections or inputs.

[0054] For example, in some embodiments, the PED **40** may function in a first mode, such as living backgrounds mode, by default, and provide access to the second mode, such as cannon games mode, in response to certain user actions or inputs. In the present embodiment, a user may simply make a selection or series of selections in order to initiate the second mode (i.e. cannon games mode). However, in other embodiments, the PED **40** may function in the second mode in response to feedback from the movement sensor **310**. For example, in some embodiments, the presence of an object **60** in the movement sensor **310** may trigger the PED **40** to move into cannon games mode and in still other embodiments (i.e. embodiments in which movement sensor **310** only detects the movement of receiver **312** and not the mere presence of an object **60**), the PED **40** may move into cannon games mode when an object **60** is moved within the receiver **312** (like a joystick). In yet other embodiments, a user may only access the second mode from within the first mode. In other words, a user may be required to touch a portion of the screen or a menu that is presented in the first mode in order to access the second mode. Regardless of how the modes are accessed or provided, each vertical play mode may also include character-specific sub modes which may be provided upon the detection of a character. In fact, in some embodiments, the detection of a character may trigger a certain mode or sub mode to be provided.

[0055] In FIGS. **17***a* and **17***b*, play set **100** is shown in the second configuration **20** and, thus, the PED **40** in a substantially flat or horizontal orientation. When the playset **100** is in the second configuration **20**, the playset **100** may provide any number of horizontal play modes that may be accessed in a similar manner to the manner described above for accessing the first and second modes of the first configuration **10**. Also, and similar to the first configuration **10**, the PED **40** is preferably electronically coupled to the playset **100** in the second configuration **20**. However, in contrast with the first configuration **10**, it is preferred that the PED **40** is able to provide any horizontal play modes whether or not the PED **40** is electronically coupled to the playset **100**.

[0056] In this particular embodiment, the PED **40** is configured to provide a third mode, such as "adventure and explo-

ration" mode, which may alternatively be referred to as adventure mode (see FIG. **17***a*), and a fourth mode, such as "figure-based games" mode (see FIG. **17***b*) when the playset **100** is in the second configuration **20**. Adventure mode may be the default mode initially provided by the PED **40** upon recognizing that it is in the second configuration **20**. Again similar to the vertical play modes, regardless of how these modes are accessed or provided, each horizontal play mode may also include character-specific sub modes which may be provided upon the detection of a character.

[0057] Now referring to FIGS. **18-19**, with continued reference to FIGS. **16***a-b* and **17***a-b,* the PED **40** may be configured to recognize any number of characters, which may alternatively be referred to as figures or figurines. In this particular embodiment, the PED **40** is configured to recognize at least a knight **501**, a troll **502**, a wizard **503**, and an archer **505**, as seen in FIG. **18**. In other embodiments, the PED **40** could be configured to recognize and adapt (i.e., "unlock" new content) to any number of other figures/characters. Regardless of the number of characters, each of these characters triggers slightly different versions or "sub modes" within the modes—living background mode, cannon mode, adventure mode and character-based games mode—provided by the PED **40**. FIG. **19** is a flow chart representation of the different modes of play.

[0058] As can be seen in the flow chart of FIG. **19** and as described above, there are four main modes of play in this particular embodiment, living backgrounds, cannon games, adventure, and figure-based games. These game modes may alternatively be referred to as a first, second, third, and fourth game modes, respectively. The software associated with these games may also include at least one menu-type setting or mode, such as "the great hall" and "the courtyard" which may include doors or areas which may allow a user to literally and figuratively enter into the available modes in a particular configuration. For example, the great hall may provide access to the cannon games and living backgrounds modes when the PED **40** is in vertical game mode while the courtyard provides access the adventure and figure-based games modes when the PED **40** is in horizontal game mode. In order to determine which of the four main modes or menu-type settings the PED **40** should enter, the PED **40** may constantly check or determine whether it is in a vertical or horizontal orientation. Upon a change in orientation, the PED **40** may shift between modes or menus. Furthermore, each of the four aforementioned modes includes sub modes, which provide slight, character-dependent variations of the main play mode that the sub mode depends from. In order to determine which of the sub modes the PED **40** should present, the PED **40** may constantly check or determine if a character has been recognized by the PED **40**.

[0059] As a more specific example of some of the modal functionality, in some embodiments, when the playset **100** is moved to an upright configuration **10**, the PED **40** may initially present the great hall. Then, upon recognition of a character, character specific sub modes of the vertical play modes may become available. In embodiments where living backgrounds mode is the default mode, a door, entry, portion, or some other feature of the great hall may be unlocked, allowing the user to enter (i.e. by moving a physical or virtual character to and through a door via touches) the character specific living background. Alternatively, upon recognition of a character, a virtual representation of the detected character may automatically move through a door revealing the associated living background. For example, the knight **501** may unlock a door to a knight's bedroom, the wizard **503** may unlock a door to a wizard's lab, the archer **505** may unlock a door to an archery range, and the troll **502** may unlock a door to a dungeon. Each character-specific living background may include different features and/or interactive elements for a user to play with, only relating to each other insofar as each living background is a room or setting.

[0060] In this particular embodiment, the "living background mode," is the default or basic mode for vertical play. In other words, if the PED **40** is in vertical play, the PED **40** may initially enter or remain in living background mode. However, since the specific living background sub mode is dependent on detected objects, if the PED **40** has detected and identified a conductive object prior to entering living background mode, the PED **40** may present a living background corresponding to the identity of that conductive object. In some embodiments, a character-specific living background may not be provided until the playset is in the upright configuration **10** and a character is detected. In the particular embodiment shown in FIG. **16**A, a knight **501** has been introduced to the PED **40** and, as such, the PED **40** is presenting the knight's room with a virtual representation of the knight **501** disposed therein. Additionally, although it is not apparent from FIG. **16***a*, this particular living background may include features, such a chest, that, if opened, provides a new and interesting feature, such a sword for the virtual representation of the knight.

[0061] Alternatively, upon detection of a character, a user may choose to enter cannon mode with this specific character, such as via a selection or via movement of an object **60** in the movement sensor **310**, as described above. In cannon mode, the gameplay is substantially the same regardless of the latest detected character, but the setting, ammo or enemies running at the user may change depending on the character that was most recently identified. For example, if the knight **501** was last detected by the PED **40**, the knight **501** specific cannon game sub mode may display enemy characters **70** resembling trolls that appear to be running towards the user, as seen in FIG. **16***b*. In some embodiments, each character's cannon mode may only be accessible from the character's specific living background mode.

[0062] As shown in FIG. **16***b*, once in cannon mode, a user may use an object **60** that is inserted into receiver **312** to manipulate a target or indicator **55** displayed on the screen of PED **40** and may use the buttons **306** to "shoot" the images or characters **70** coming towards him or her. Alternatively, a user may simply tap the screen at an appropriate location in order to "shoot" the images or characters **70** coming towards him or her. In some embodiments, if the PED **40** includes a rear-facing camera or recording device, the PED **40** may present the image seen behind the play set **100** as the background and superimpose characters **70** thereon. Thus, the characters running towards the user may appear to running in the real-world background that is disposed behind the play set **100**.

[0063] Then, when the PED **40** is moved to a flat configuration **20**, the PED **40** may initially present a courtyard or other outdoor setting, as seen in FIG. **17***a*, which enables a user to select or move between different sub modes of adventure mode and to enter into character-based games. Dependent on the character or virtual representation of the character detected, the PED **40** may provide different character-themed settings and areas to explore from this courtyard in the various adventure sub modes. Each of these areas may match the

theme of the playset **100** in order to increase the play value of the playset **100**. Additionally, the courtyard may also include areas or hotspots which may allow a user to enter into the figure-based games mode. Different hotspots may only be accessible by certain characters or may only appear upon the detection of certain characters.

[0064] In some embodiments, once the user moves a character or virtual representation of that character to a hotspot, the PED **40** may provide a figure-based game sub mode that is suited or tailored to a detected character, as seen in FIG. **17***b*. For example, the PED **40** may present a Knight-specific game, or Knight-specific version of a game, when the knight **501** is detected at a specific hotspot (as seen in FIG. **17***b*), a wizard-specific game, or wizard-specific version of a game, when the wizard **503** is detected at a specific hotspot, an archer-specific game, or archer-specific version of a game when the archer **505** is detected at a specific hotspot, and a troll game, or troll-specific version of a game when the troll **502** is detected at a specific hotspot. Similar to cannon mode, each of the character-specific sub modes of a figure-based games mode may be substantially similar, but the setting, enemies, or other aspects of the game appearance may be altered in order to make the game character-specific.

[0065] It is to be understood that a toy play set with multiple modes and a housing for a portable electronic device may be fabricated from any suitable material, or combination of materials, such as plastic, foamed plastic, wood, cardboard, pressed paper, metal, supple natural or synthetic materials including, but not limited to, cotton, elastomers, polyester, plastic, rubber, derivatives thereof, and combinations thereof. Suitable plastics may include high-density polyethylene (HDPE), low-density polyethylene (LDPE), polystyrene, acrylonitrile butadiene styrene (ABS), polycarbonate, polyethylene terephthalate (PET), polypropylene, ethylene-vinyl acetate (EVA), or the like. Suitable foamed plastics may include expanded or extruded polystyrene, expanded or extruded polypropylene, EVA foam, derivatives thereof, and combinations thereof.

[0066] It is also to be understood that terms such as "left," "right," "top," "bottom," "front," "rear," "side," "height," "length," "width," "upper," "lower," "interior," "exterior," "inner," "outer" and the like as may be used herein, merely describe points or portions of reference and do not limit the present invention to any particular orientation or configuration. Further, the term "exemplary" is used herein to describe an example or illustration. Any embodiment described herein as exemplary is not to be construed as a preferred or advantageous embodiment, but rather as one example or illustration of a possible embodiment of the invention.

[0067] Although the disclosed inventions are illustrated and described herein as embodied in one or more specific examples, it is nevertheless not intended to be limited to the details shown, since various modifications and structural changes may be made therein without departing from the scope of the inventions and within the scope and range of equivalents of the claims. In addition, various features from one of the embodiments may be incorporated into another of the embodiments. Accordingly, it is appropriate that the appended claims be construed broadly and in a manner consistent with the scope of the disclosure as set forth in the following claims.

What is claimed is:

1. A toy play set comprising:
a support structure;
a first movable portion, the first movable portion defining a housing configured to receive a portable electronic device; and
a second movable portion, the first and second movable portions being movably coupled to the support structure and movable between a first configuration and a second configuration, the first movable portion being in an upright orientation in the first configuration and a flat orientation in the second configuration and the portable electronic device being configured to provide different game modes depending at least upon the orientation of the first movable portion.

2. The toy play set of claim **1**, wherein the second movable portion is in a flat orientation in both the first configuration and the second configuration.

3. The toy play set of claim **1**, wherein the first and second movable portions are rotatable between the flat orientation and the upright orientation with respect to the support structure.

4. The toy play set of claim **1**, wherein the second movable portion further comprises:
controls electronically coupled to the portable electronic device.

5. The toy play set of claim **4**, wherein the controls comprise:
at least one of a movement sensing assembly or buttons.

6. The toy play set of claim **1**, wherein the game mode provided by the portable electronic device is further dependent upon the detected presence of a certain character or object.

7. The toy play set of claim **6**, wherein the toy play set is operable in at least a first game mode or a second game mode when in the first configuration and a third or fourth game mode when in the second configuration, wherein the first and second game modes are only accessible when the portable electronic device is electronically coupled to the playset.

8. The toy play set of claim **7**, wherein the second movable portion further comprises:
controls electronically coupled to the portable electronic device and the second game mode is played via the controls.

9. The toy play set of claim **7**, wherein at least one of the first, second, third and fourth games modes includes character-specific sub modes, each of the sub modes being initiated upon detection of a character.

10. The toy play set of claim **7**, wherein the support structure includes a theme and the portable electronic device displays interactive images that match the theme of the support structure when in the first and third game modes.

11. The toy play set of claim **10**, wherein the support structure includes a castle theme.

12. The toy play set of claim **1**, wherein the first movable portion comprises:
a top; and
a bottom, the top and bottom forming a housing for receiving the portable electronic device therebetween and the top and the bottom being selectively coupleable along at least one of their edges in order to selectively secure the portable electronic device within the housing.

13. The toy play set of claim **12**, wherein the first movable portion further comprises:

at least two actuators, the top and bottom only being decoupleable along at least one of their edges when more than one of the at least two actuators are actuated simultaneously.

14. A toy play set comprising:

a support structure configured to rest atop a support surface and including at least one feature configured to receive a toy accessory; and

a housing configured to removably receive a portable electronic device, the housing being movably coupled to the support structure and movable with respect to the support structure between a flat orientation and an upright orientation.

15. The toy play set of claim **14**, wherein the support structure and housing include a theme and the portable electronic device is configured to display images or games which match the theme when the portable electronic device is received within the housing.

16. The toy play set of claim **14**, wherein the portable electronic device is configured to provide at least a first play mode in the flat orientation and at least a second play mode in the upright orientation, the first play mode being different from the second play mode.

17. The toy play set of claim **14**, wherein the housing is a first movable portion and the toy play set further comprises:

a second movable portion, the second movable portion also being movably coupled to the support structure, the second movable portion including controls to allow a user to interact with the portable electronic device.

18. A housing for a portable electronic device comprising:

a top including at least two lateral edges;

a bottom hingedly coupled to the top at a first lateral edge and removably securable to the top via a locking mechanism at a second lateral edge, the top and bottom being configured to receive the portable electronic device therebetween;

at least two actuators, wherein more than one of the at least two actuators must be actuated simultaneously in order to release the locking mechanism and decouple the second lateral edge of the bottom from the top; and

a hinge coupled to a toy play set, wherein the hinge allows the housing for the portable electronic device to be rotatably coupled to the toy play set along the first lateral edge so that the housing is rotatable between a flat orientation and an upright orientation.

19. The housing of claim **18**, wherein the housing is configured to be electronically coupled to the portable electronic device when the portable electronic device is received therein.

20. The housing of claim **18**, wherein the top further comprises:

a cover biased in a first position, the first position aligning the cover to cover a home button of a portable electronic device when the portable electronic device is oriented in a first direction within the housing, wherein the cover is selectively retractable to a second position which reveals the home button; and

a slot being alignable with the home button in order to expose the home button when the portable electronic device is oriented in a second direction within the housing.

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