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(54) **PROGRAMMABLE INTERACTIVE TOY**

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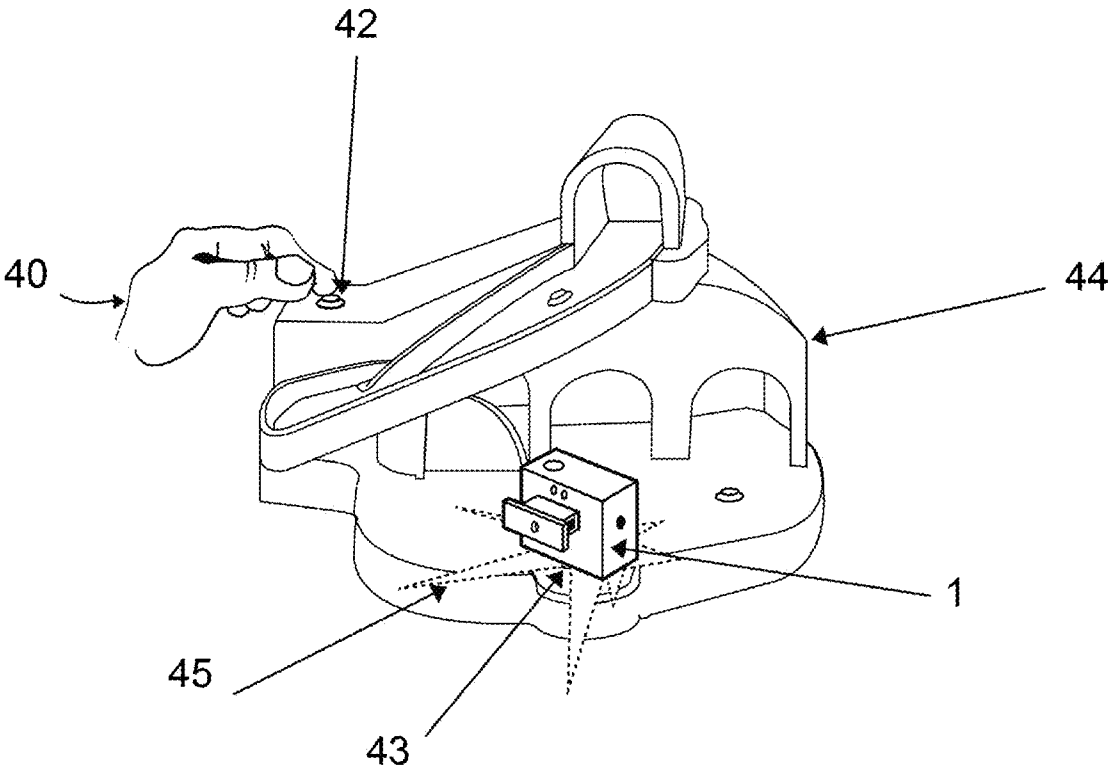
A63H 30/04 (2006.01)

(52) **U.S. Cl.**
CPC ***A63H 30/04*** (2013.01)

(57) **ABSTRACT**

An interactive toy which includes an object light sensor, an object microprocessor with an integrated memory device, controlled by an object switch mechanism, with a power source is programmable with light pulses from a separate toy device which consists of an object light source and user input methods such as buttons, also controlled with a microprocessor to control light coding. The interactive toy stores user codes in sequence applied. When the user takes away toy from device light source, the toy is placed down onto a flat playing surface where the object switch mechanism will engage and sequentially trigger playback of user applied codes. Preprogrammed commands (non-user) are herewith accessed and activated. When the said interactive toy is in the playback phase, output may be either or a combination of lights, audio clips, sounds, motion of parts and full motion of embodiment. The action of code inputs stimulates a child's logic and thinking, developing essential STEAM skills. The various forms of interaction with the toy base device adjusts the light source output to create a different code commands. A range of compatible accessories and toy playsets further diversify the play experience.



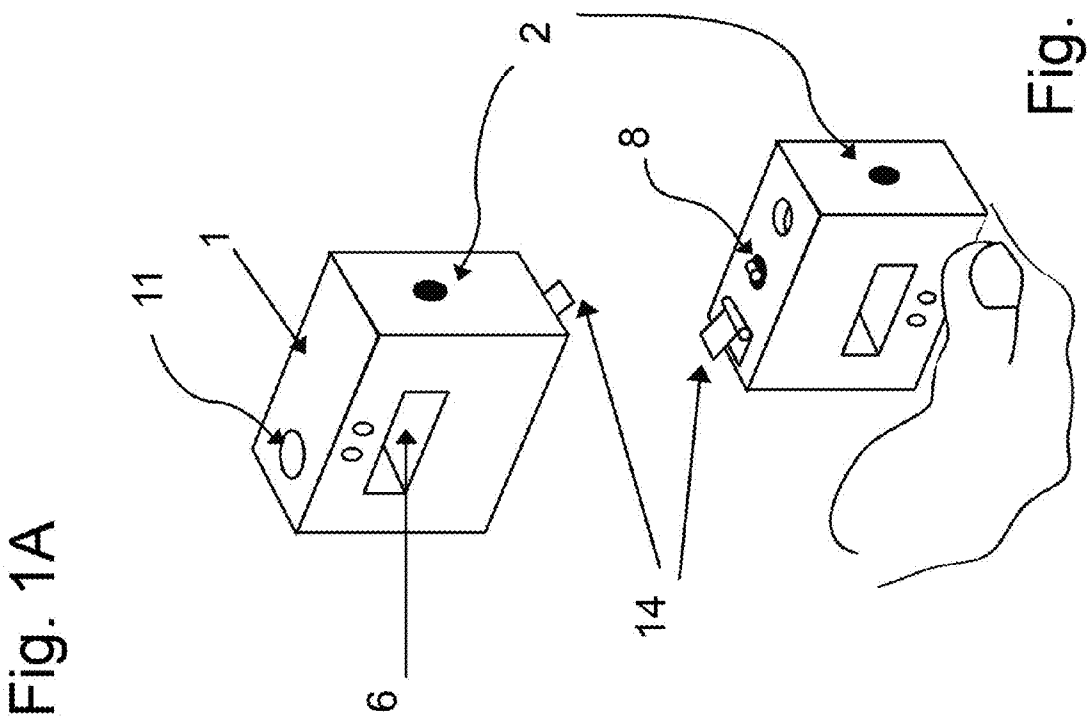
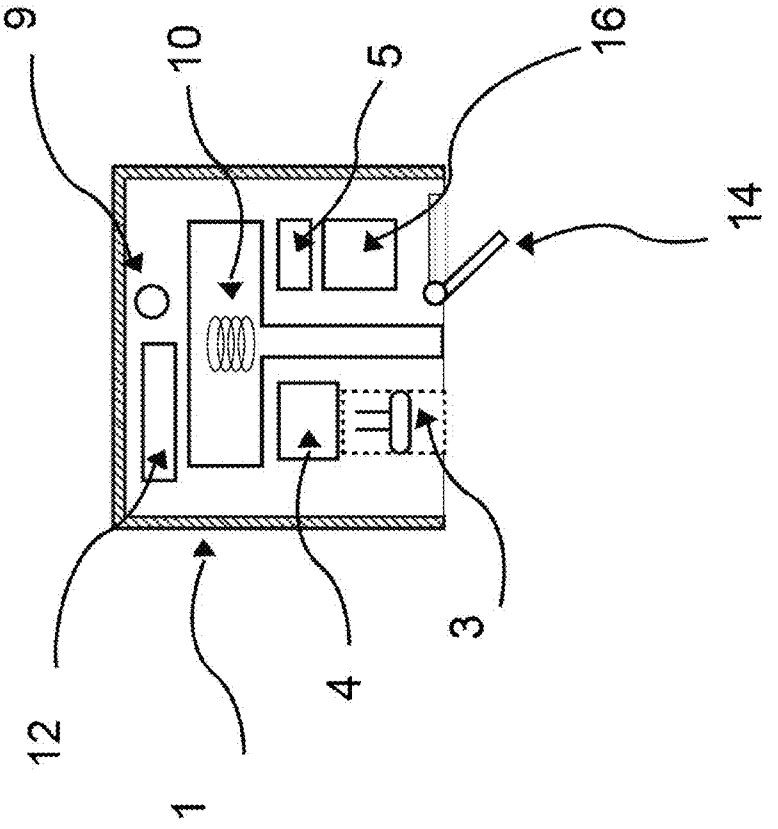


Fig. 1A

Fig. 1B

Fig. 2



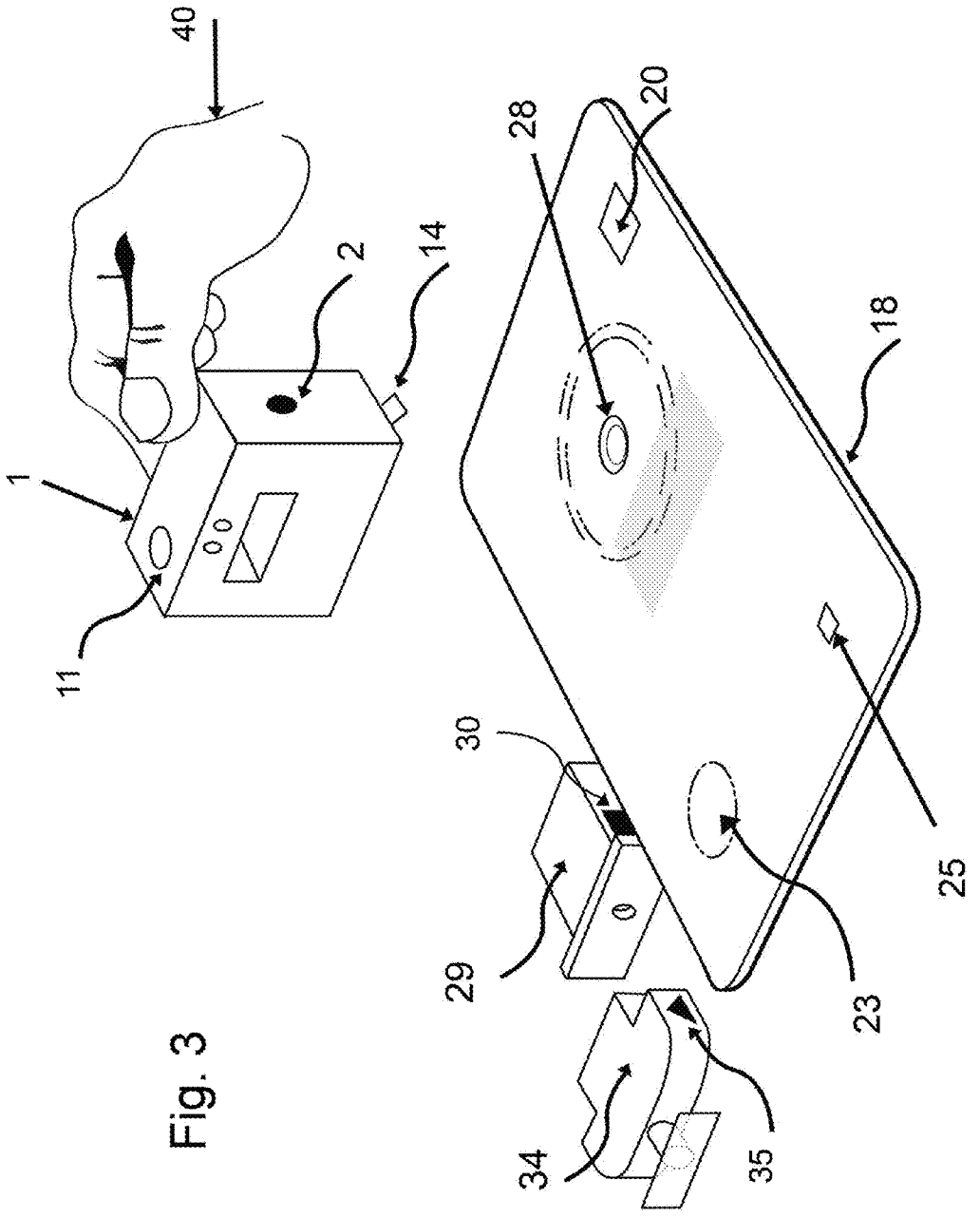


Fig. 3

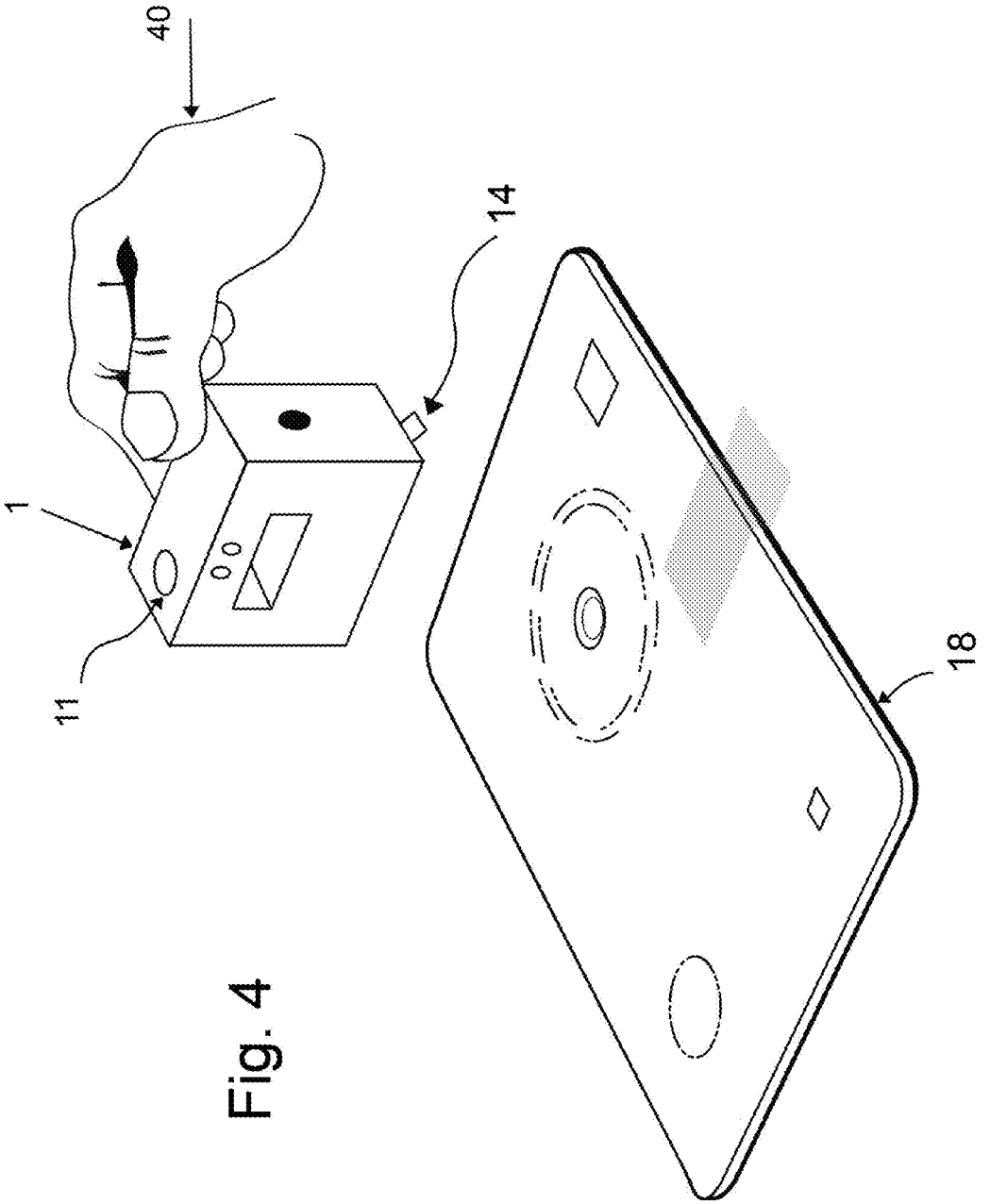


Fig. 4

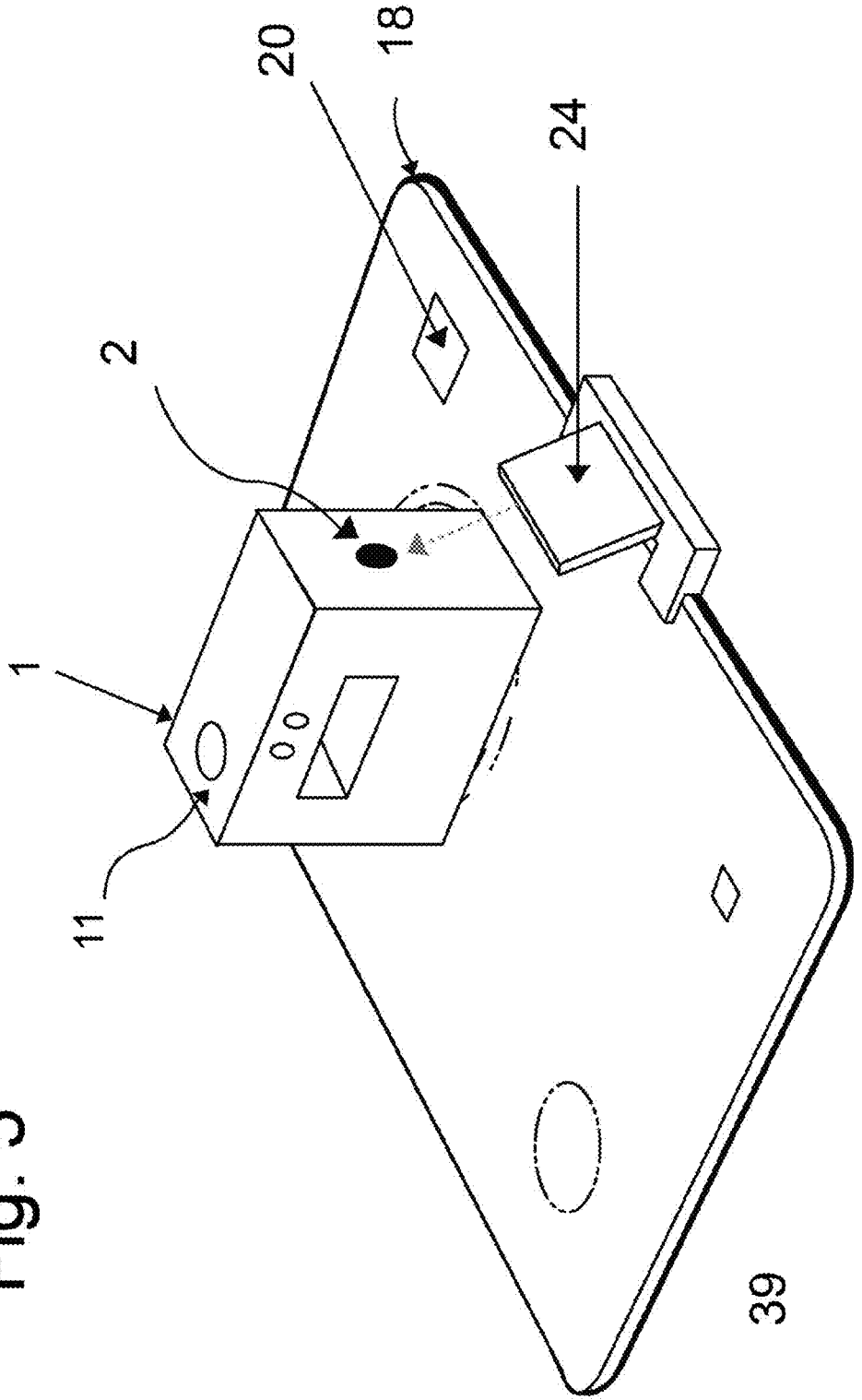


Fig. 5

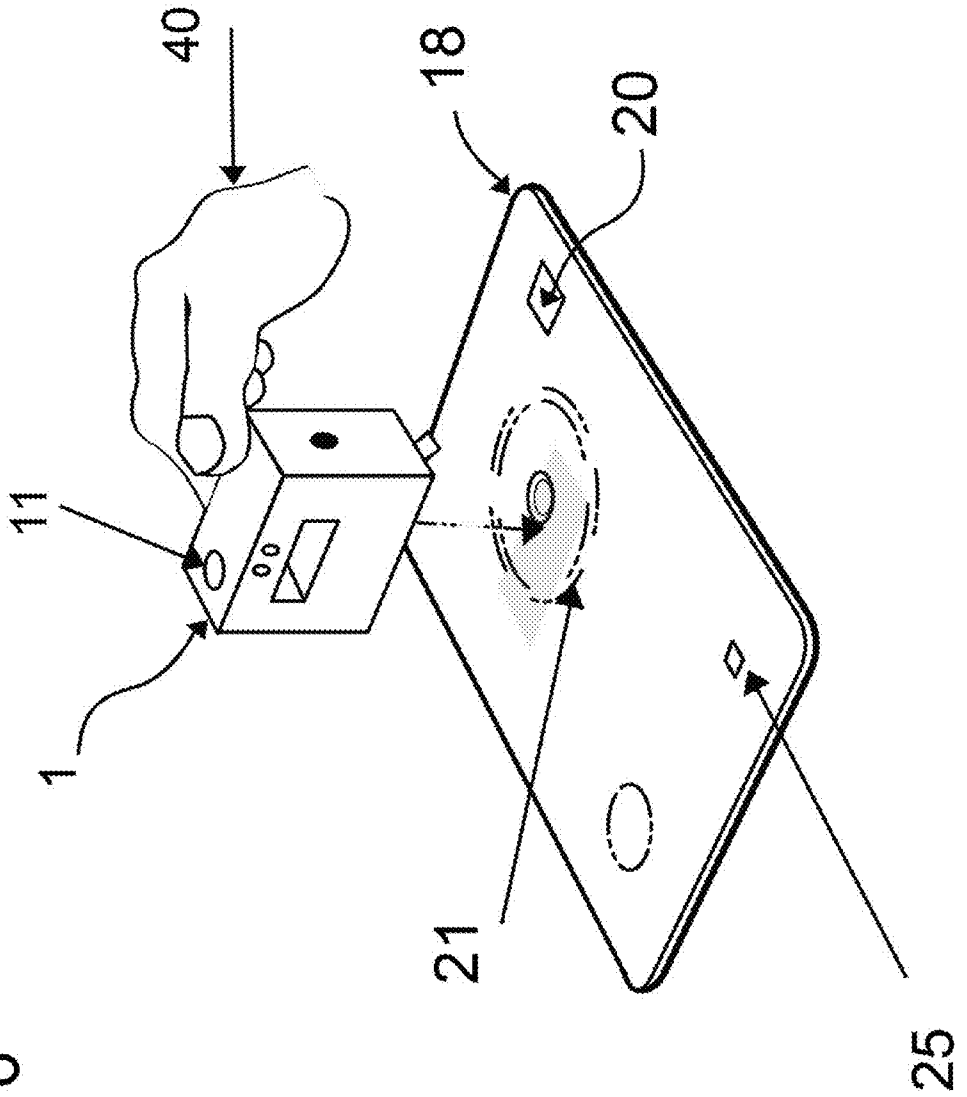


Fig. 6

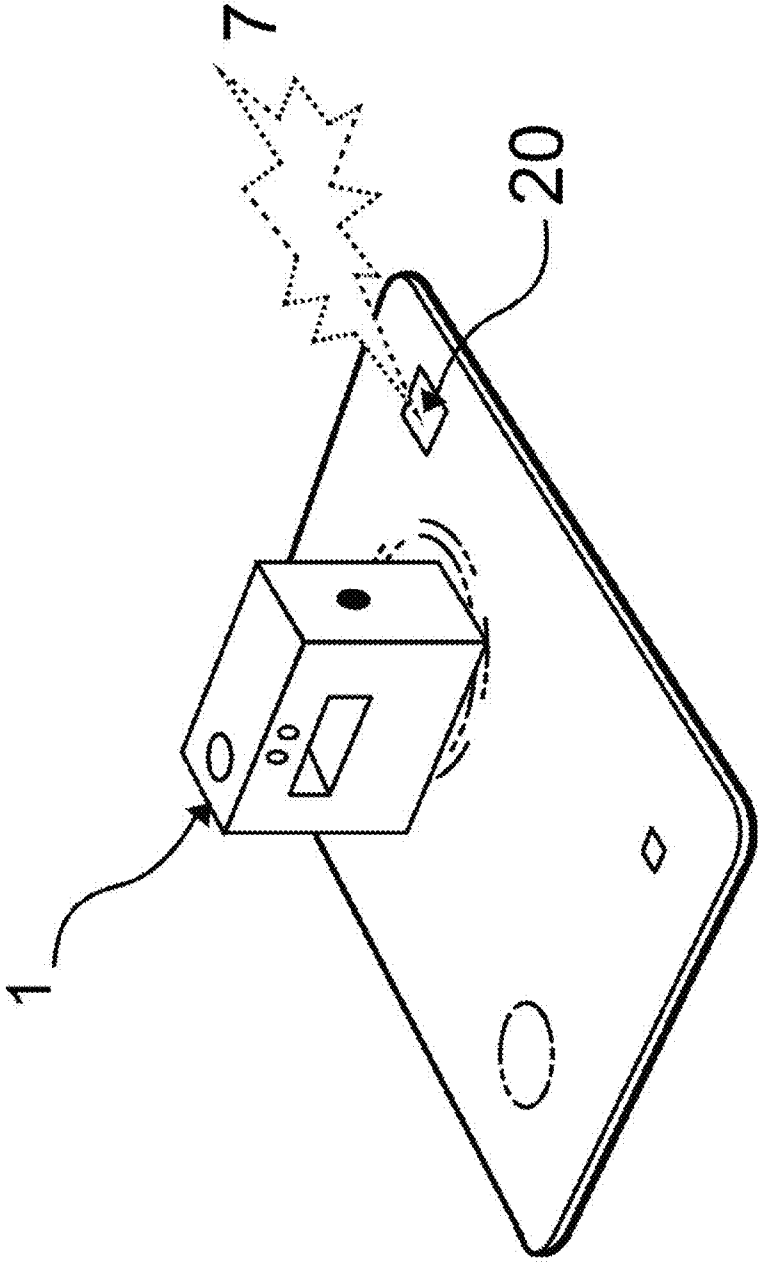


Fig 7

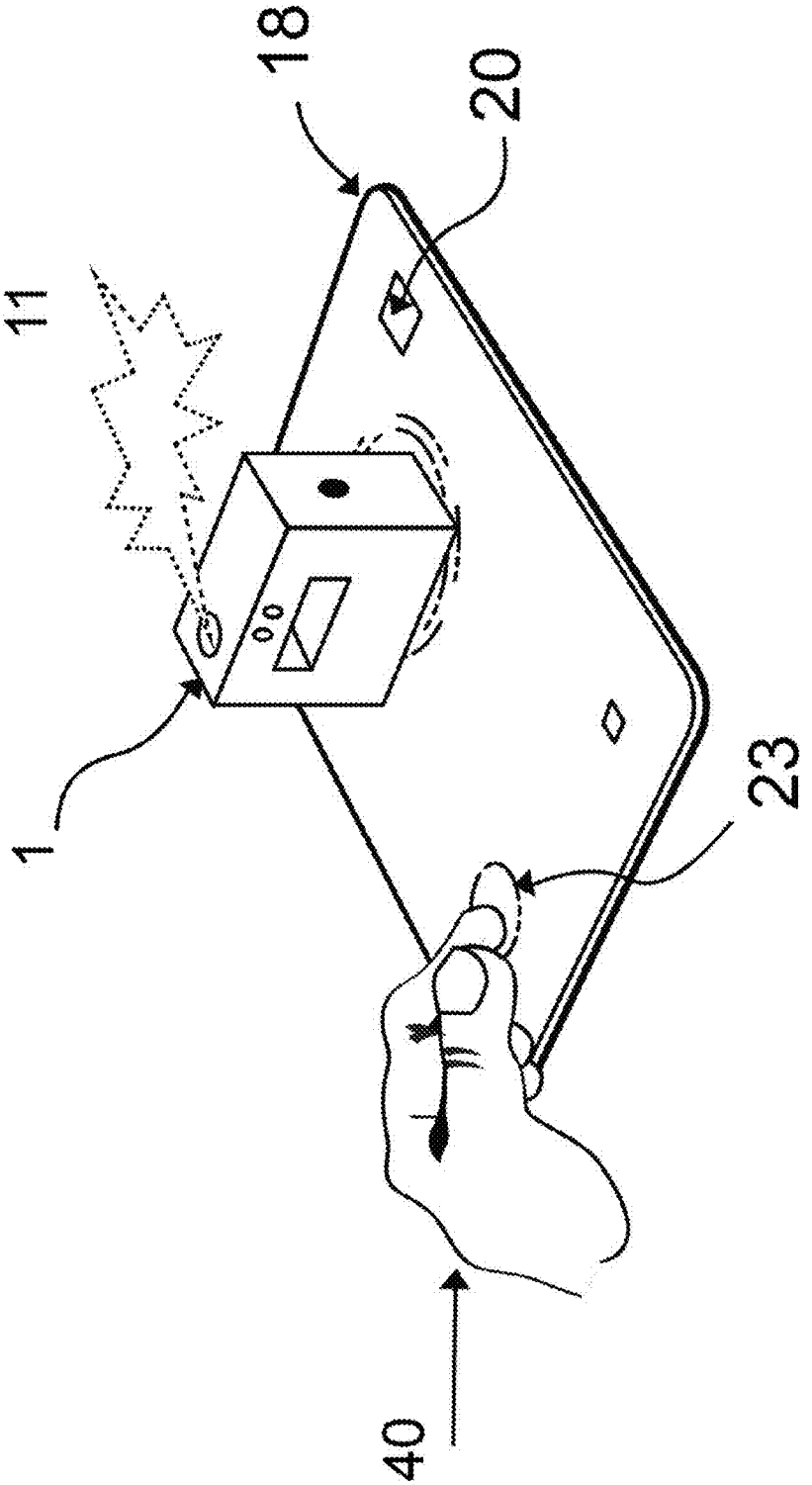


Fig. 8

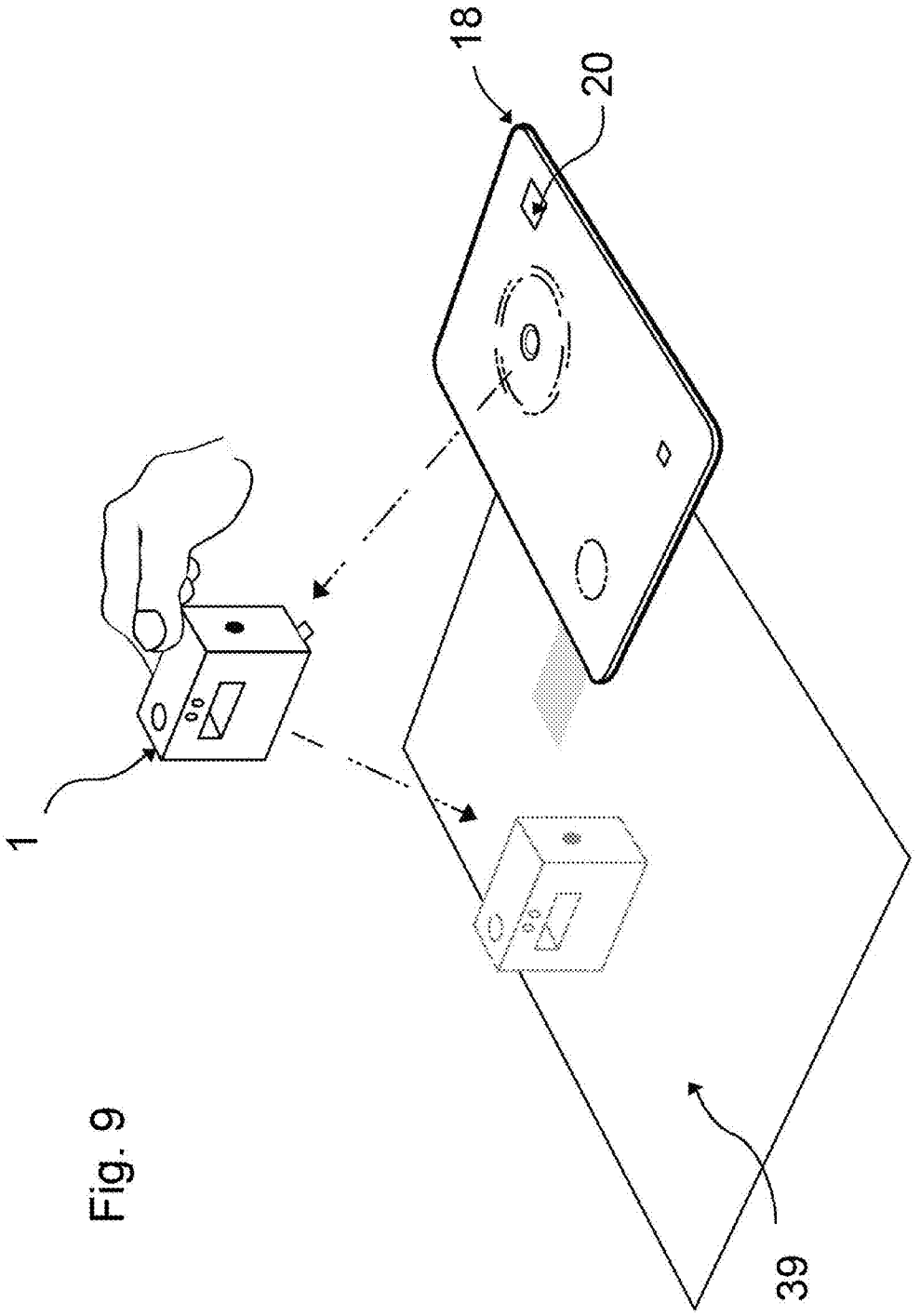


Fig. 9

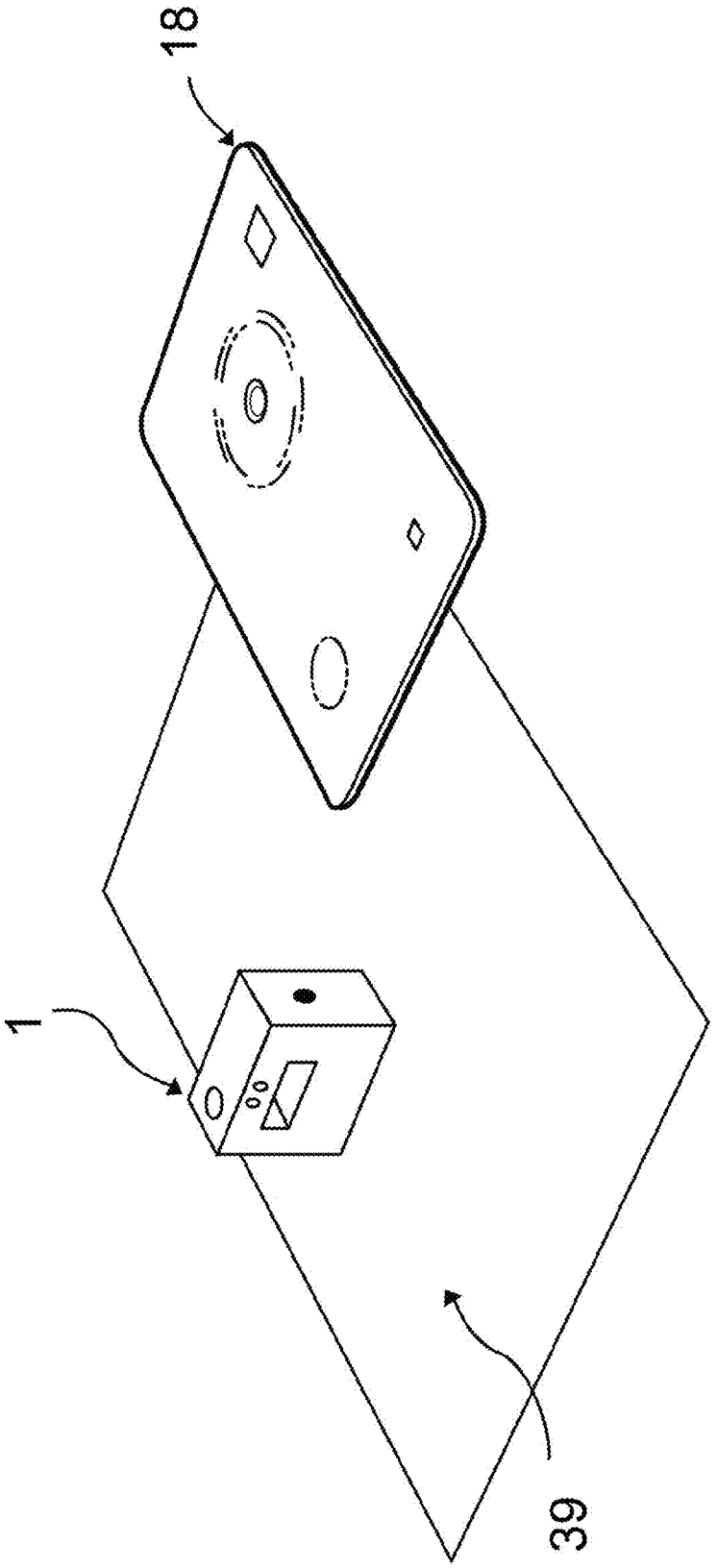


Fig. 10

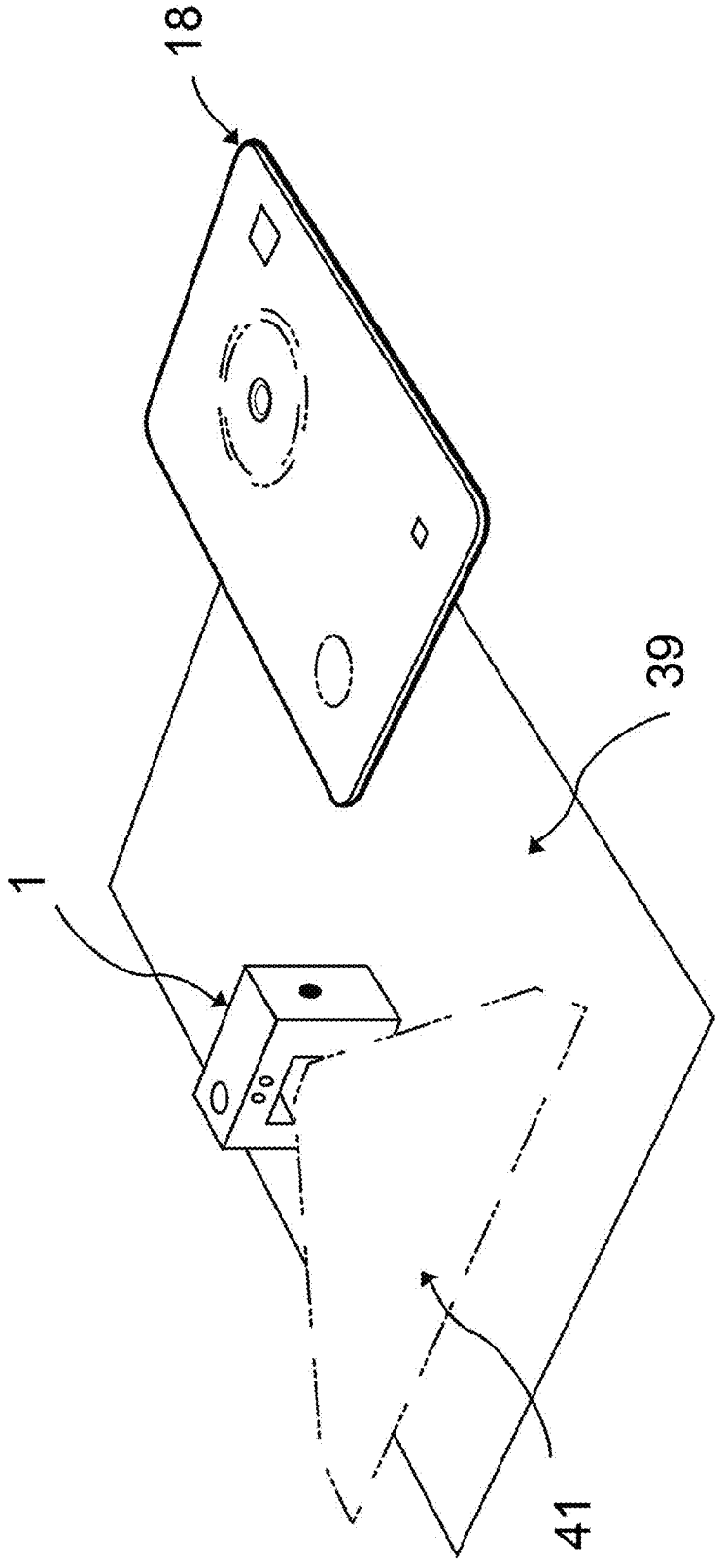
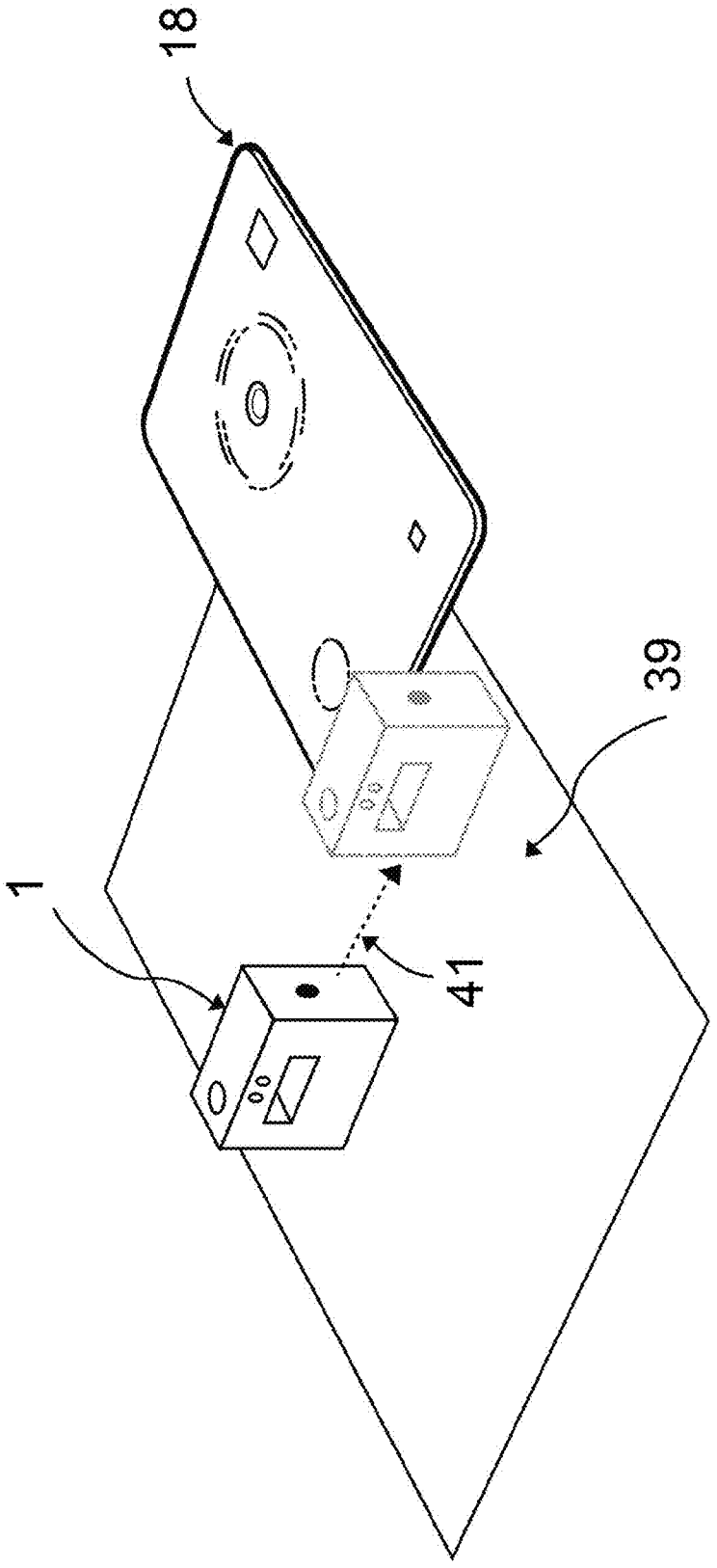


Fig. 11



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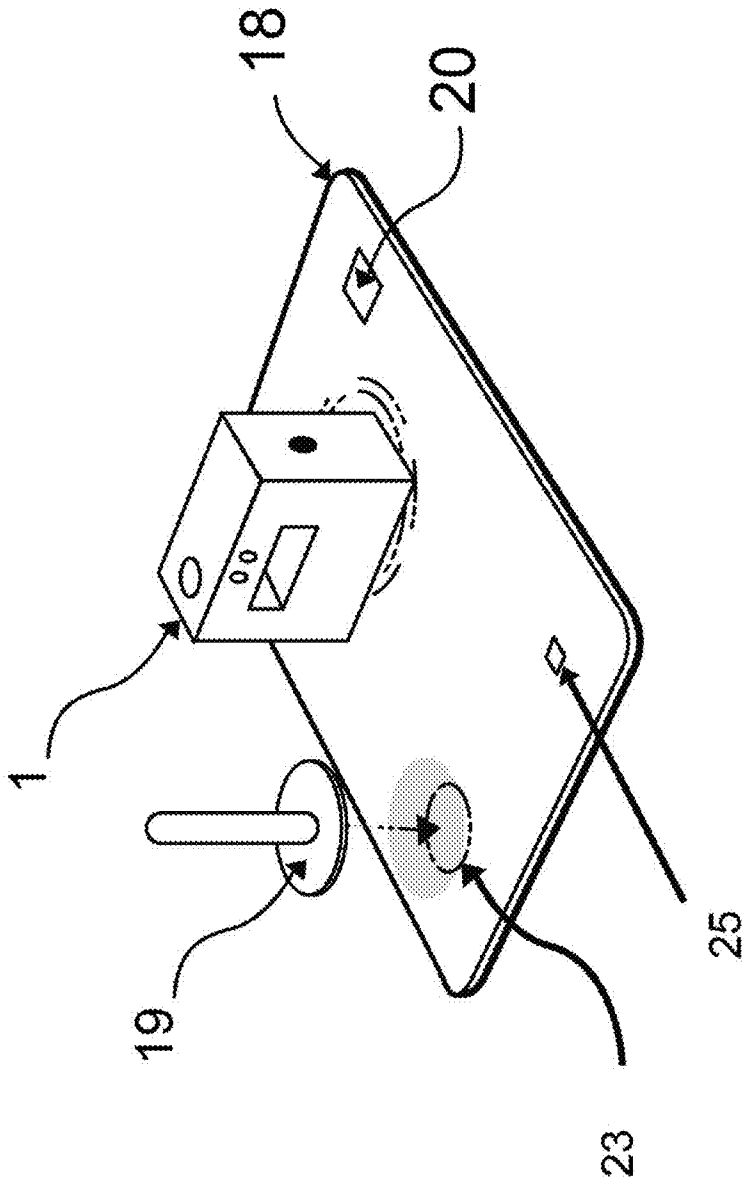

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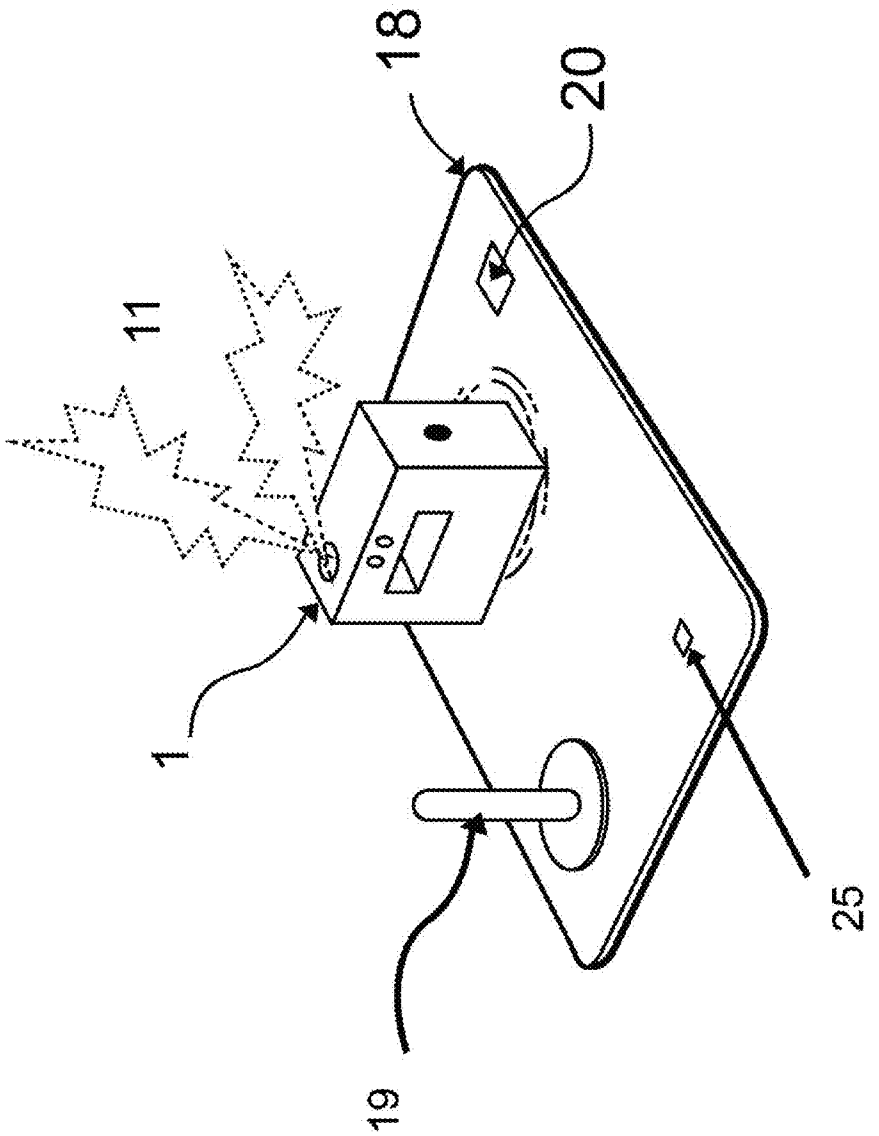


Fig. 14

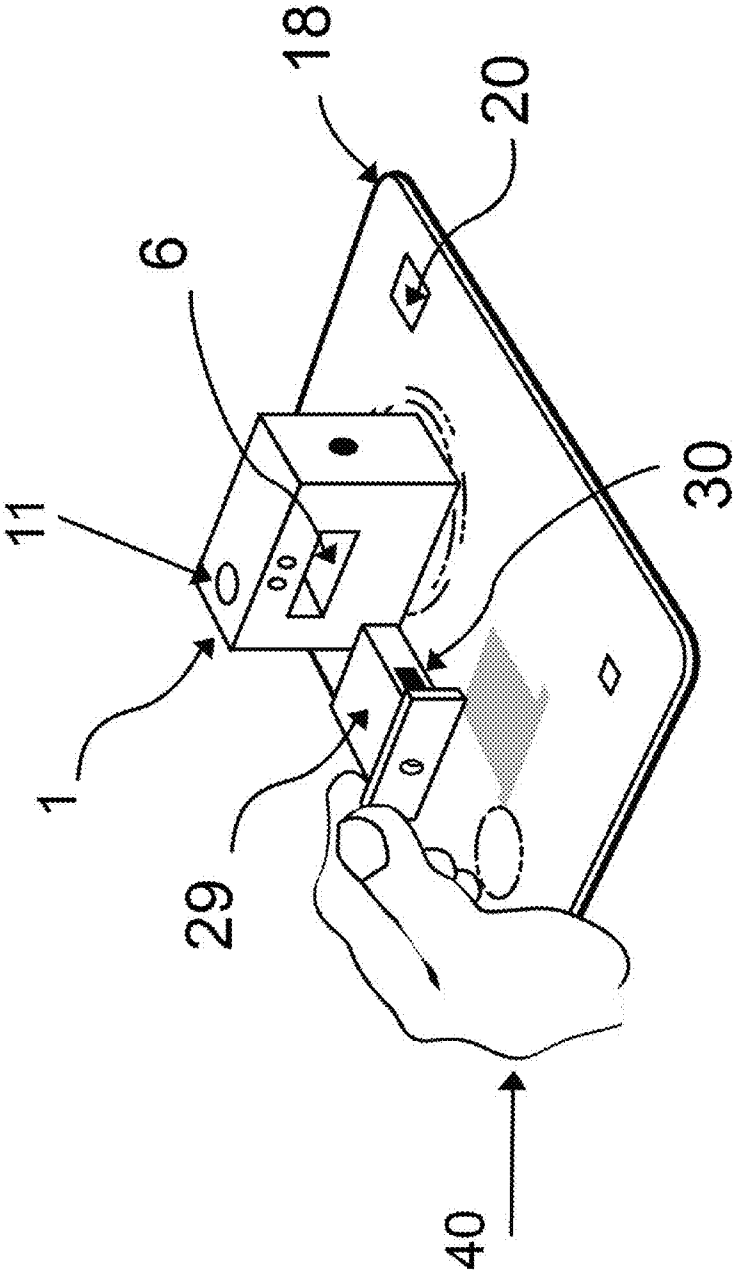
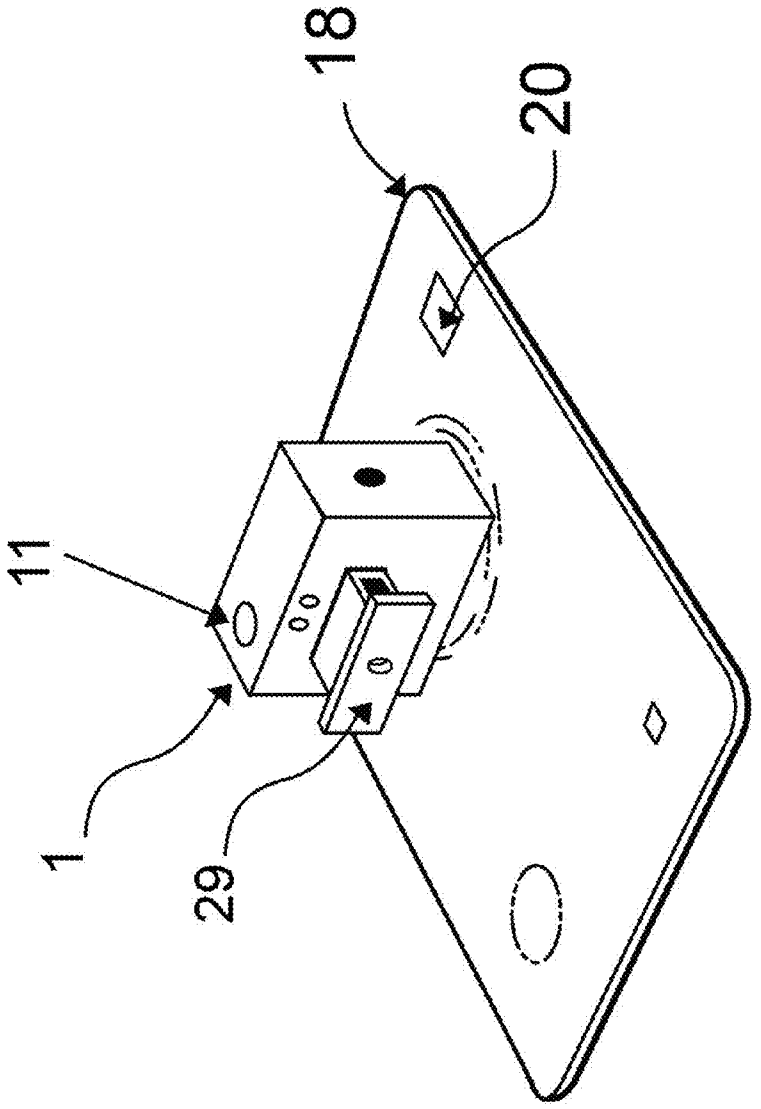


Fig. 15



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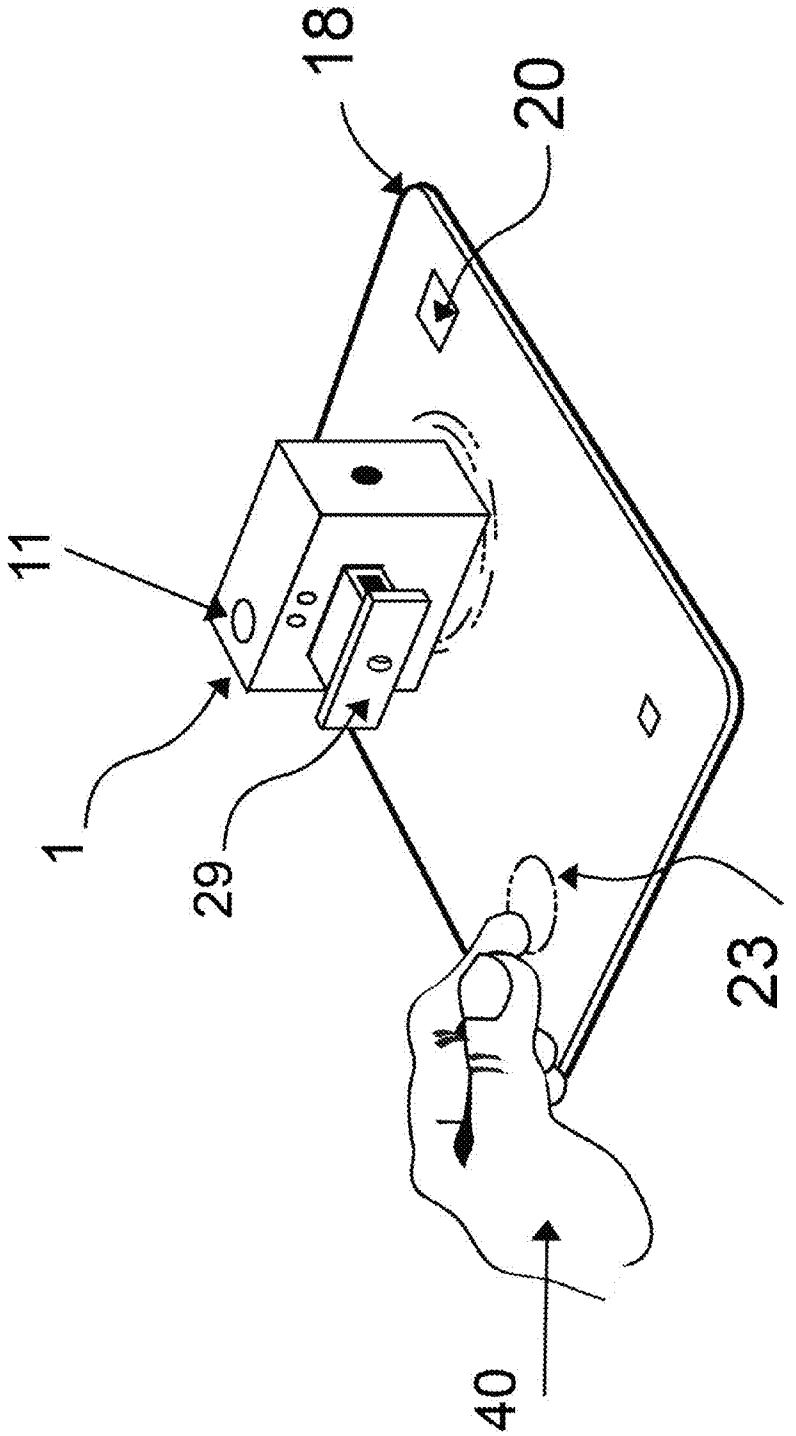

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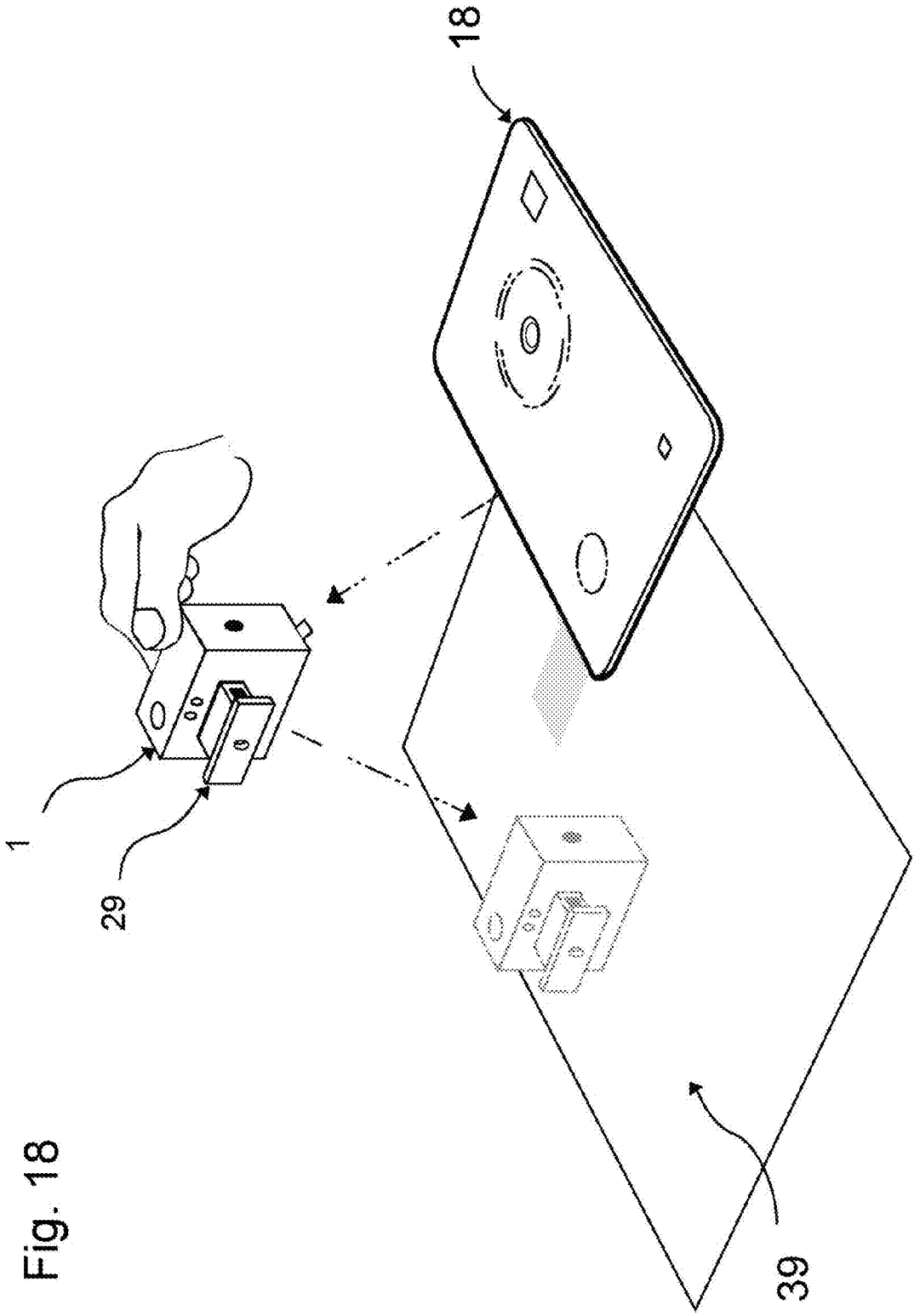

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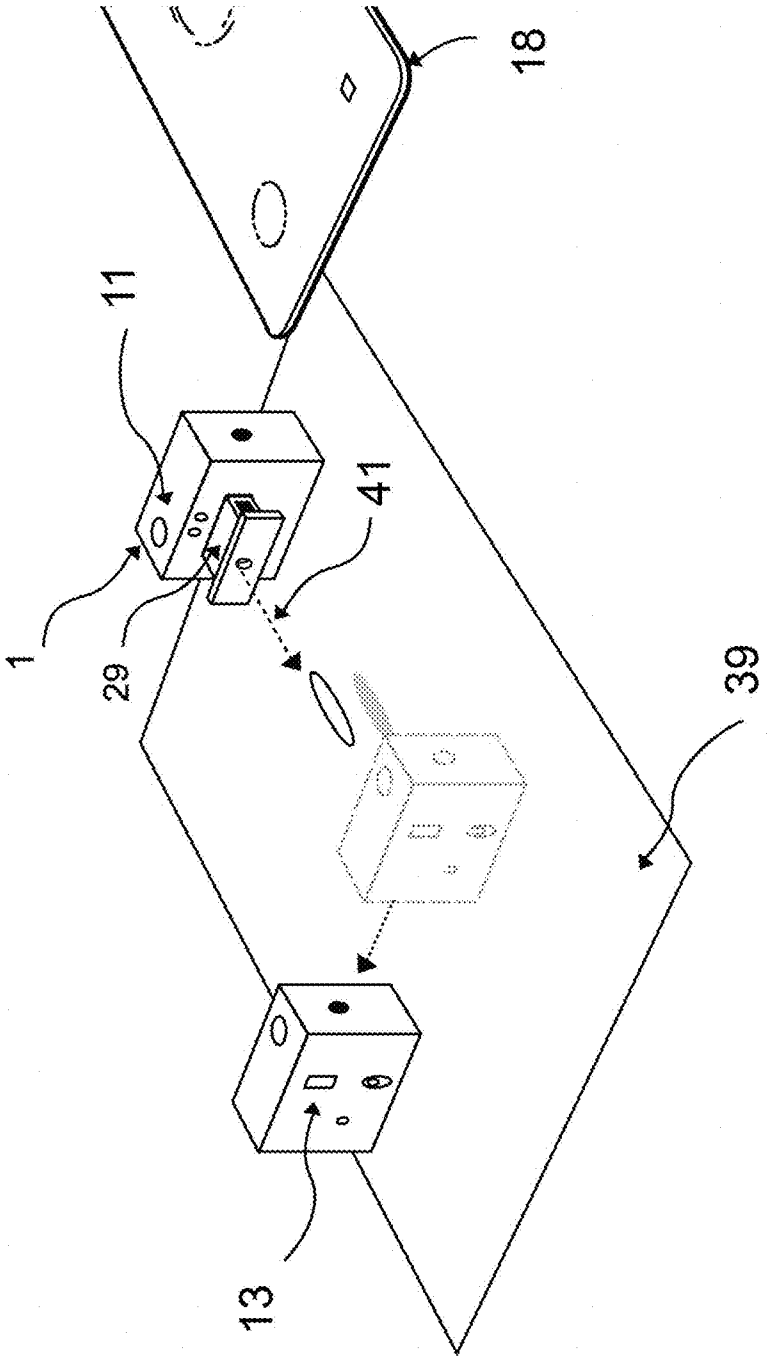

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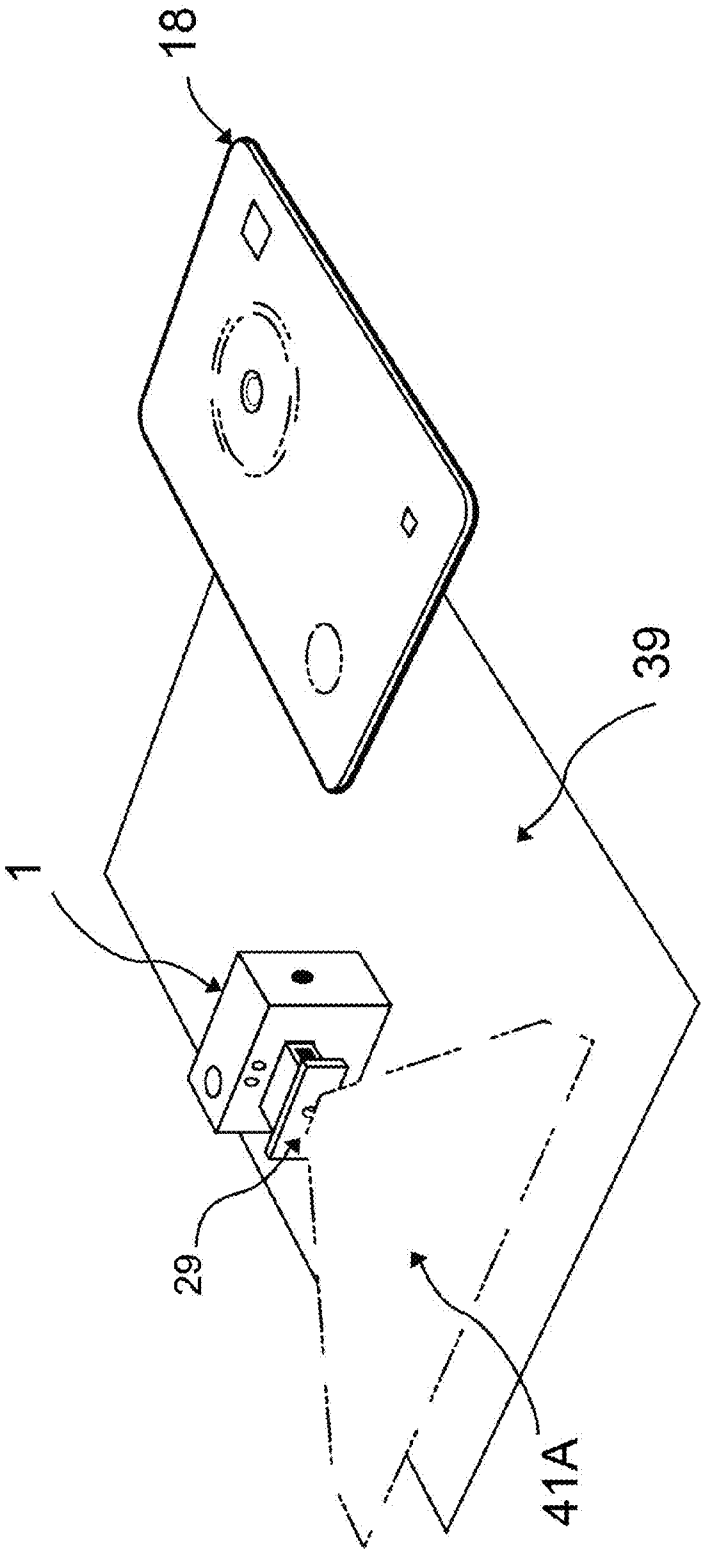

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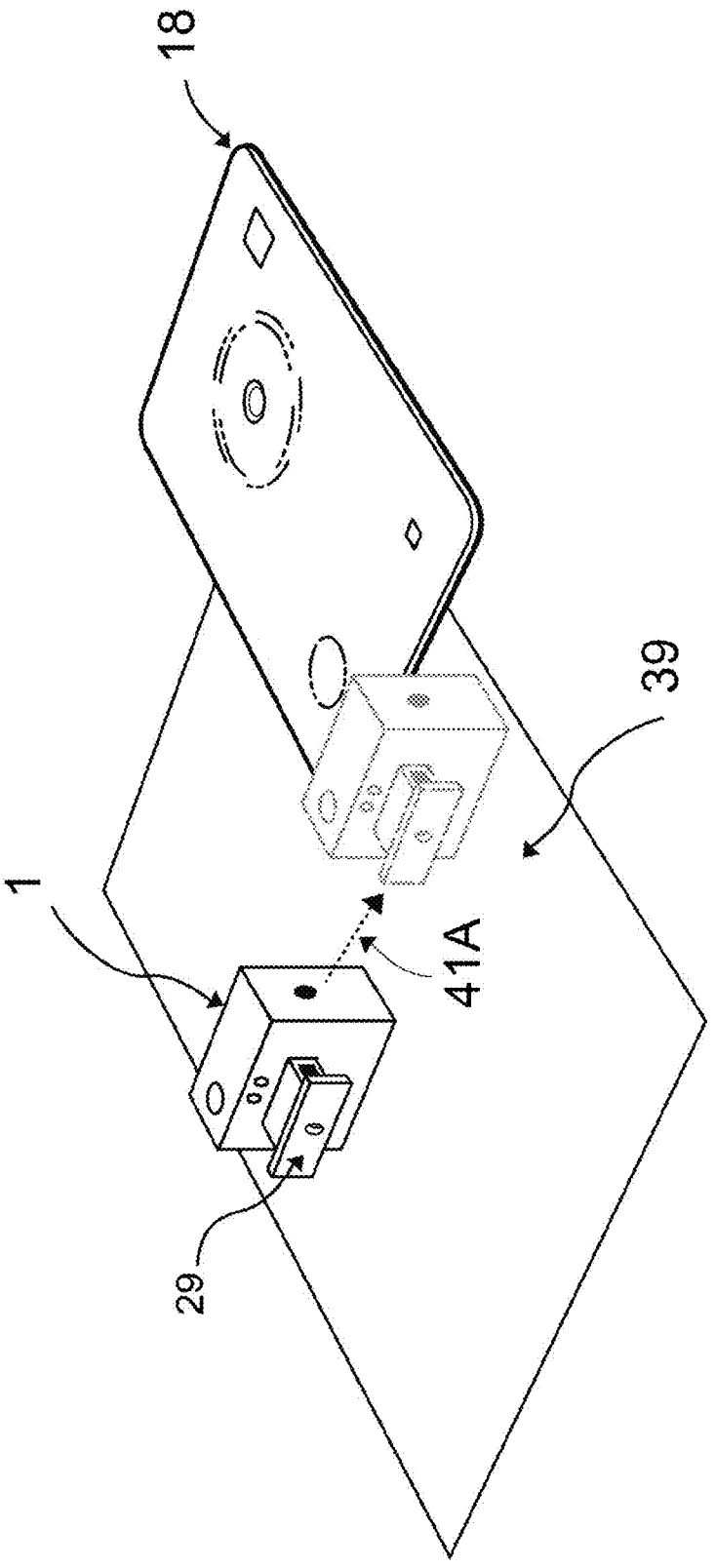

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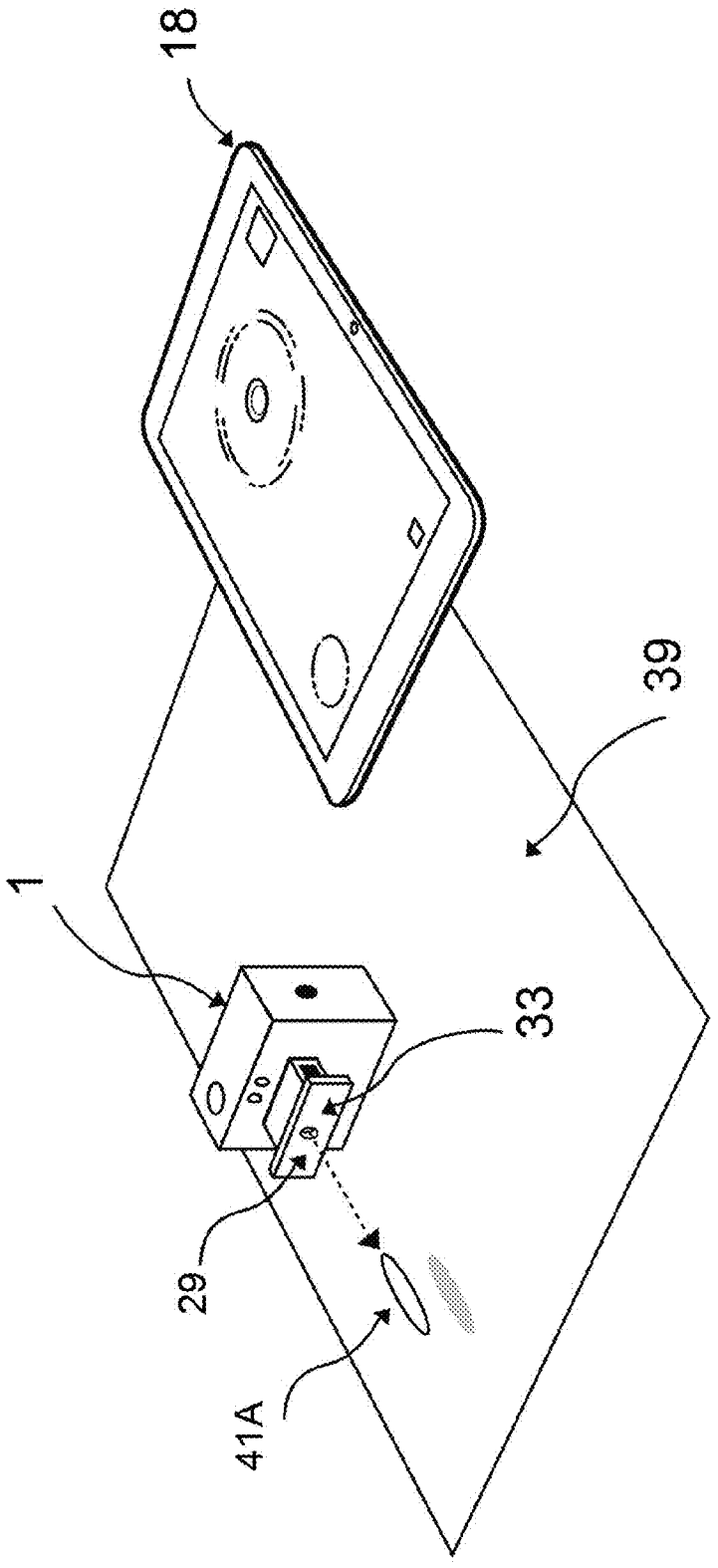

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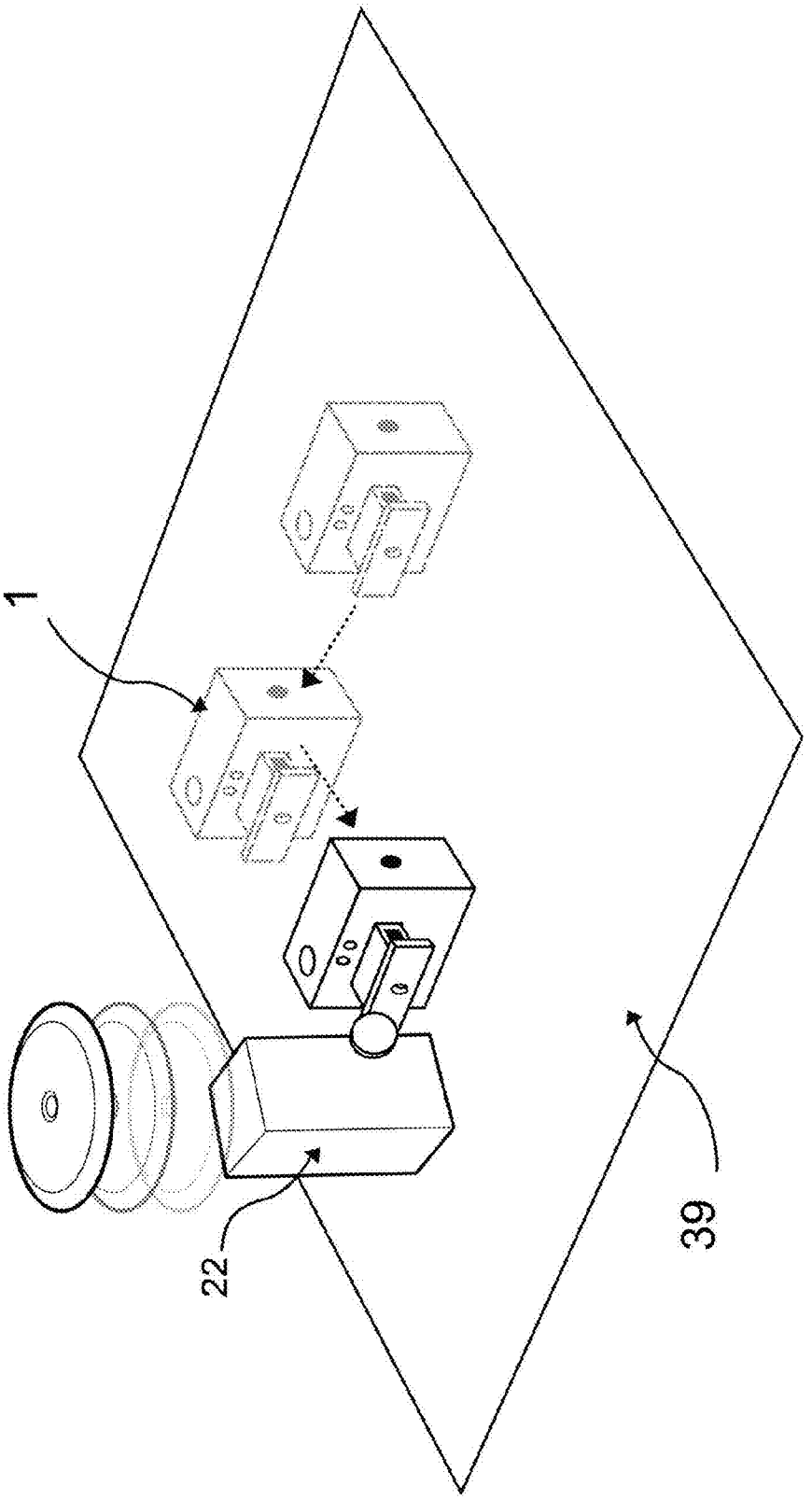

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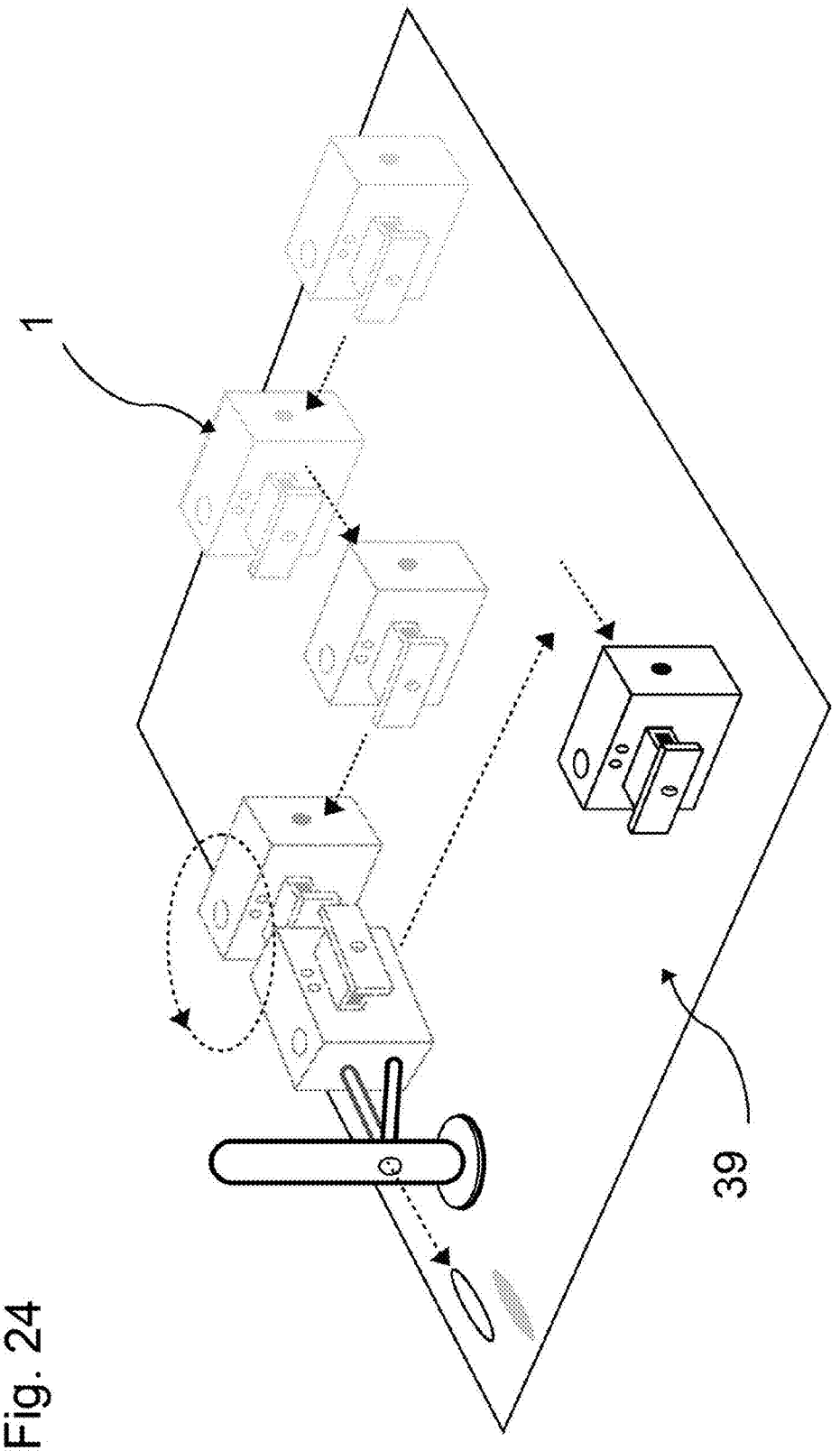
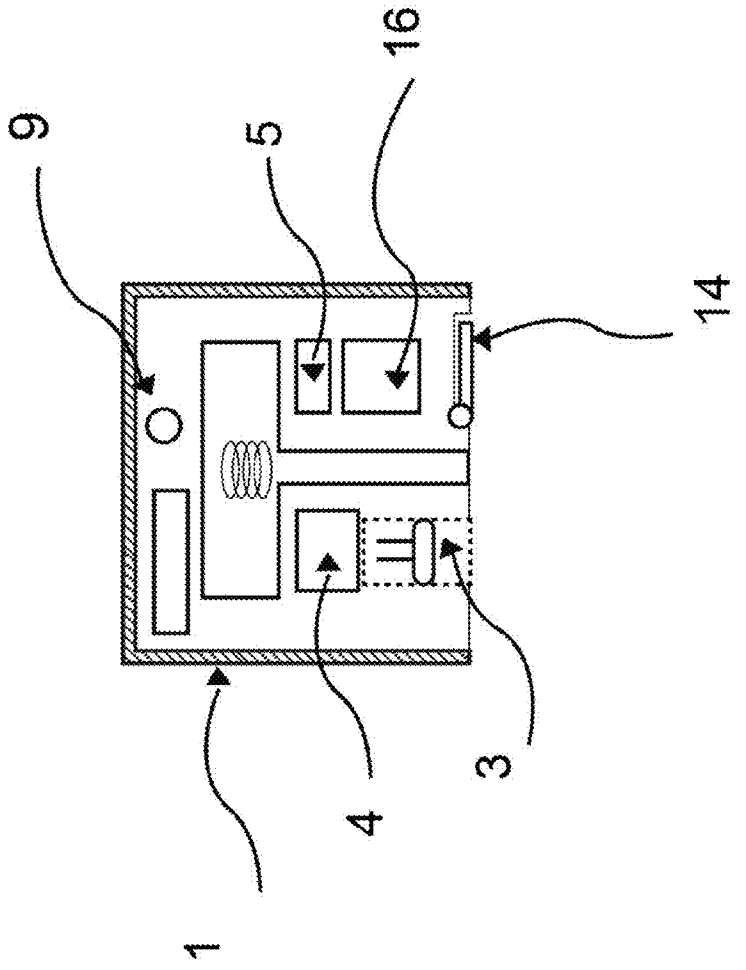


Fig. 24



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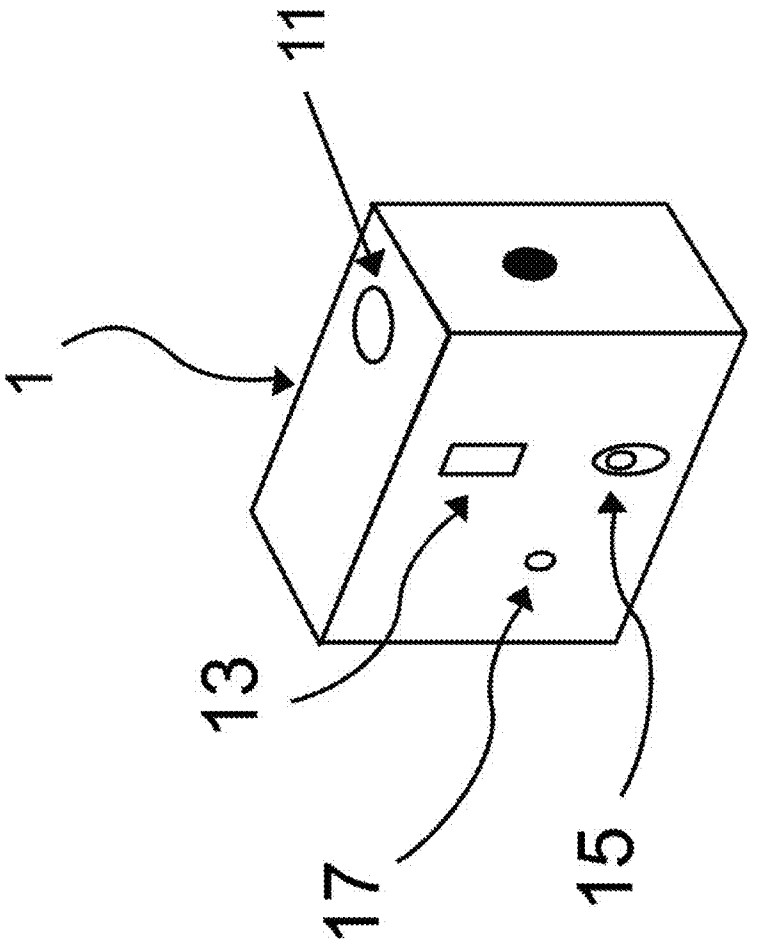

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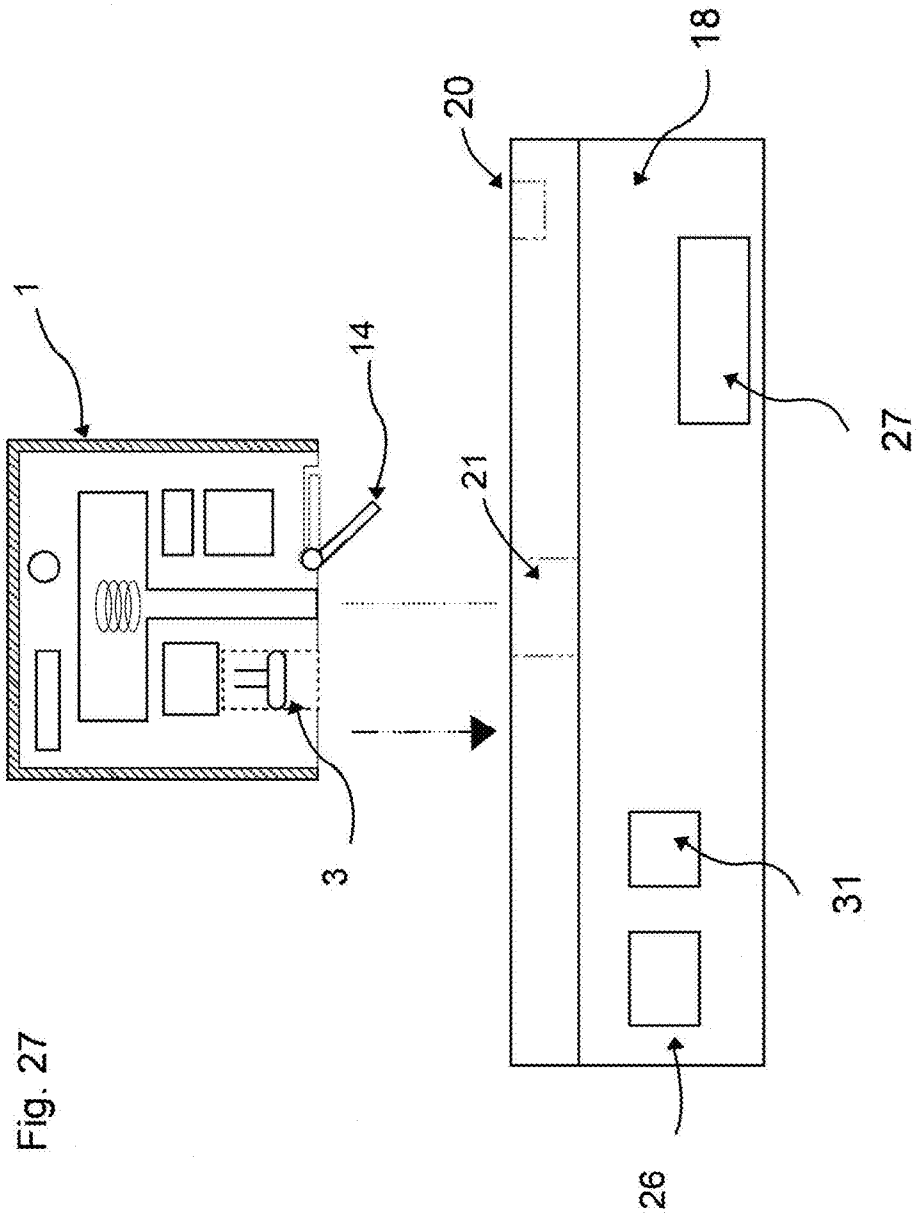

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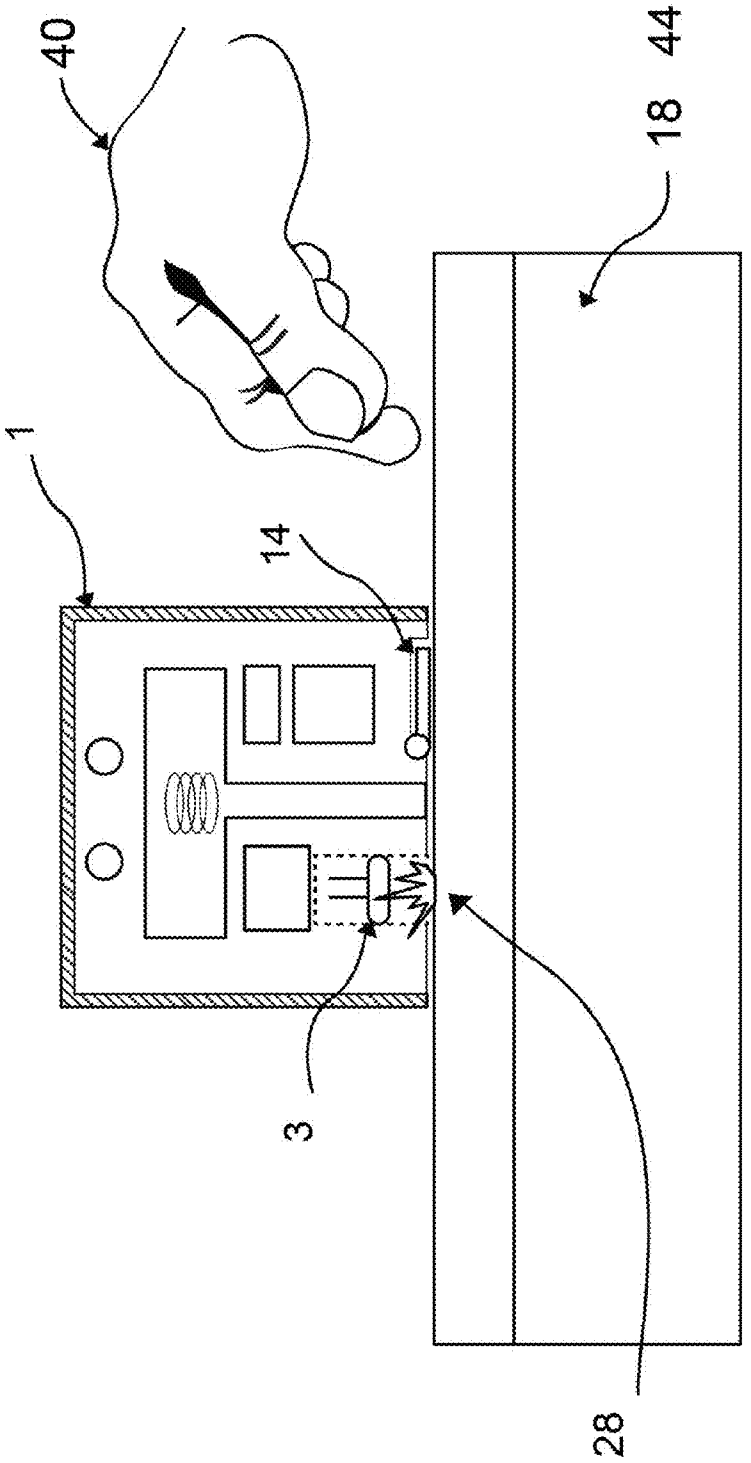

Fig. 28

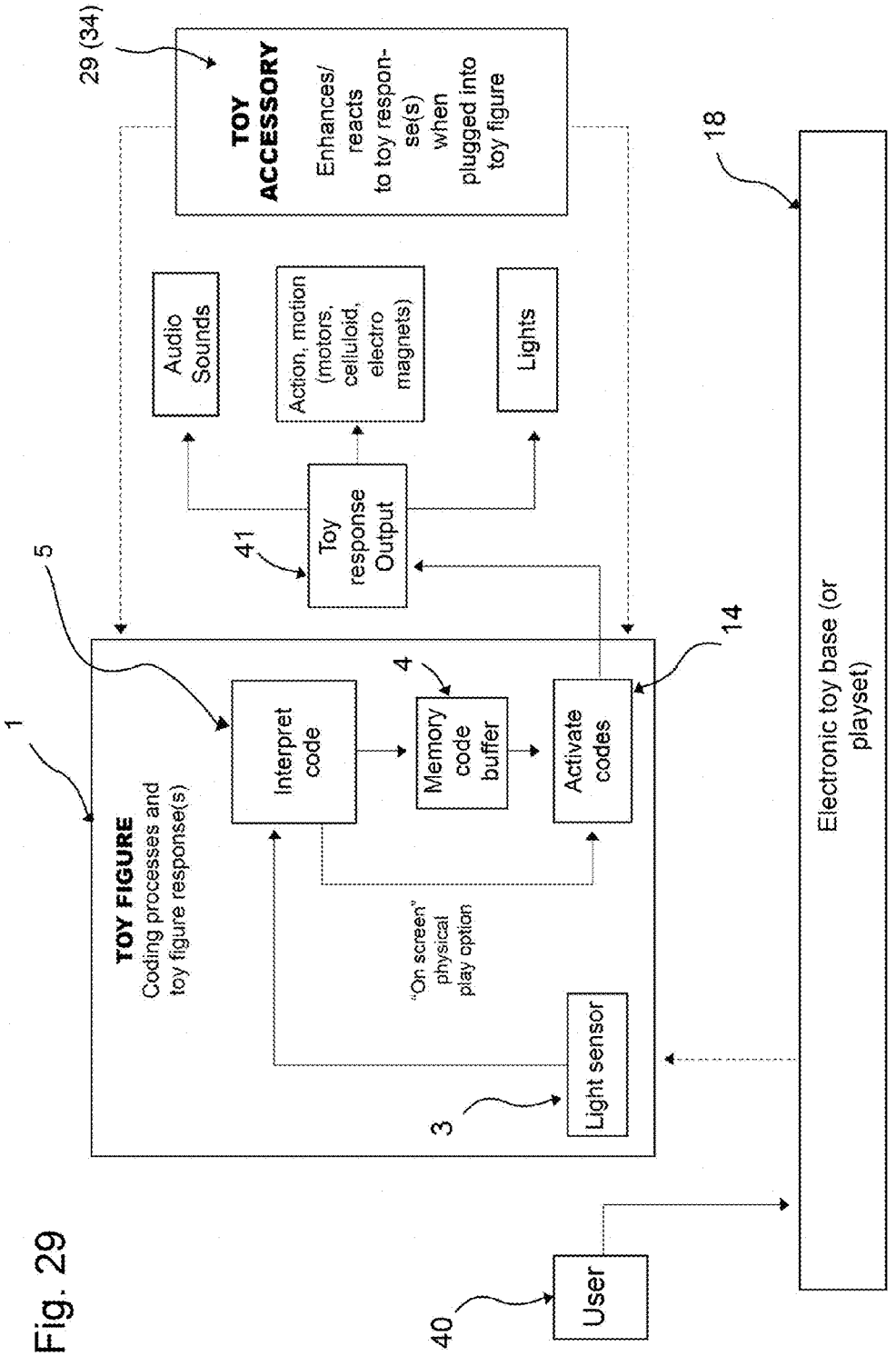
29 (34)
TOY ACCESSORY
Enhances/ reacts to toy respon-se(s) when plugged into toy figure
18
Audio Sounds
Action, motion (motors, celluloid, electro magnets)
Lights
41
Toy response Output
5
14
4
1
Interpret code
Memory code buffer
Activate codes
TOY FIGURE
Coding processes and toy figure response(s)
Electronic toy base (or playset)
"On screen" physical play option
Light sensor
3
40
User

Fig. 29

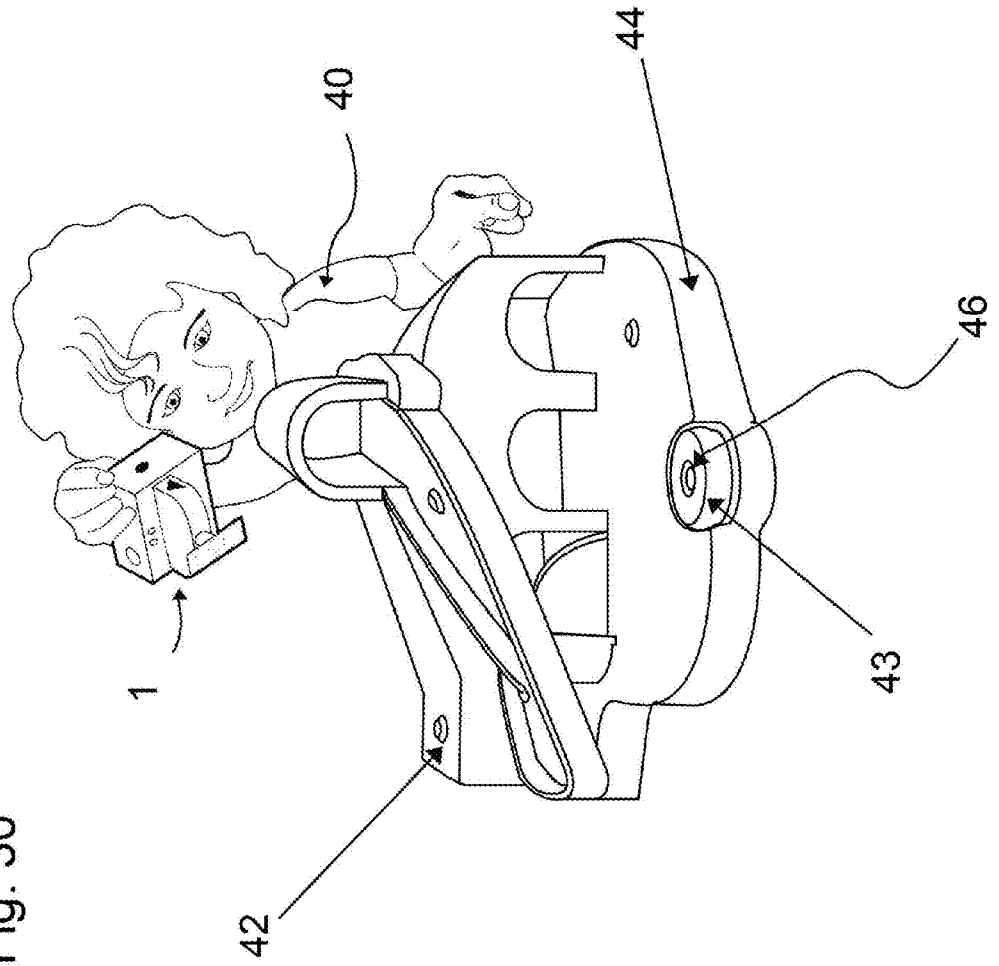

Fig. 30

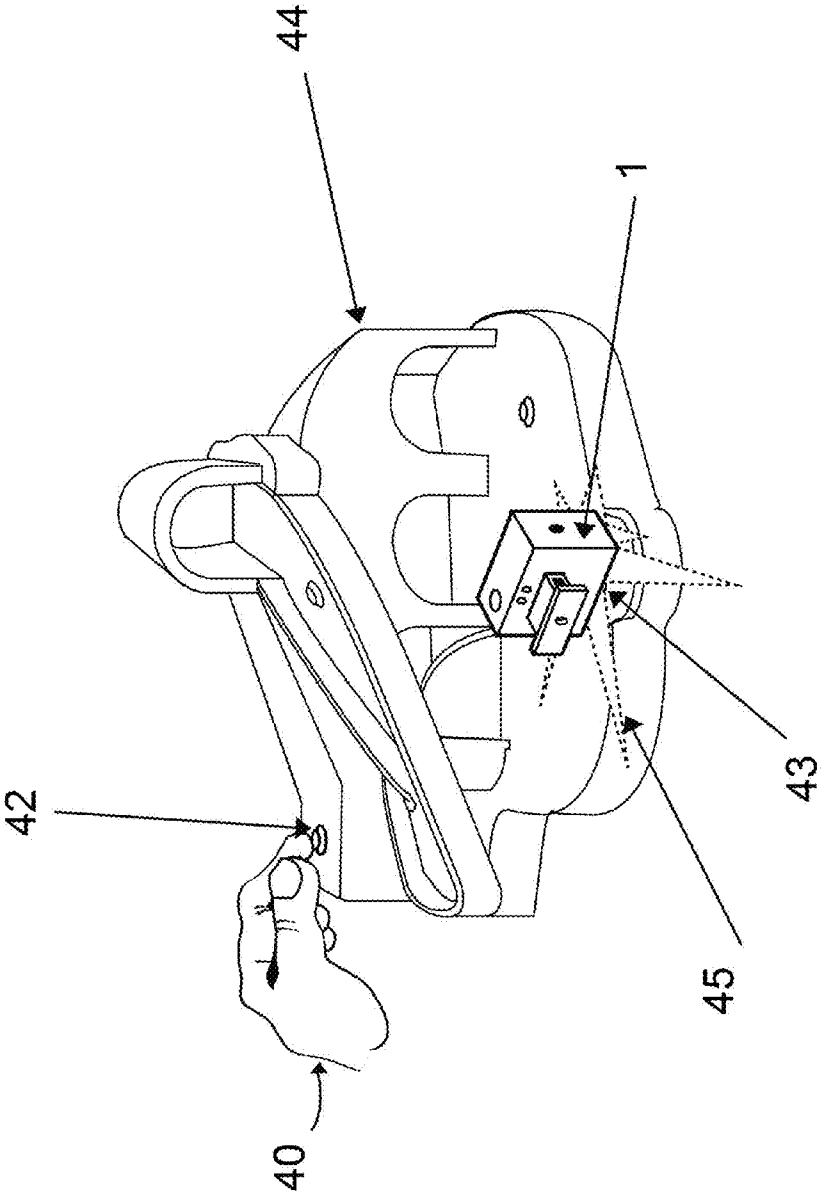

Fig. 31

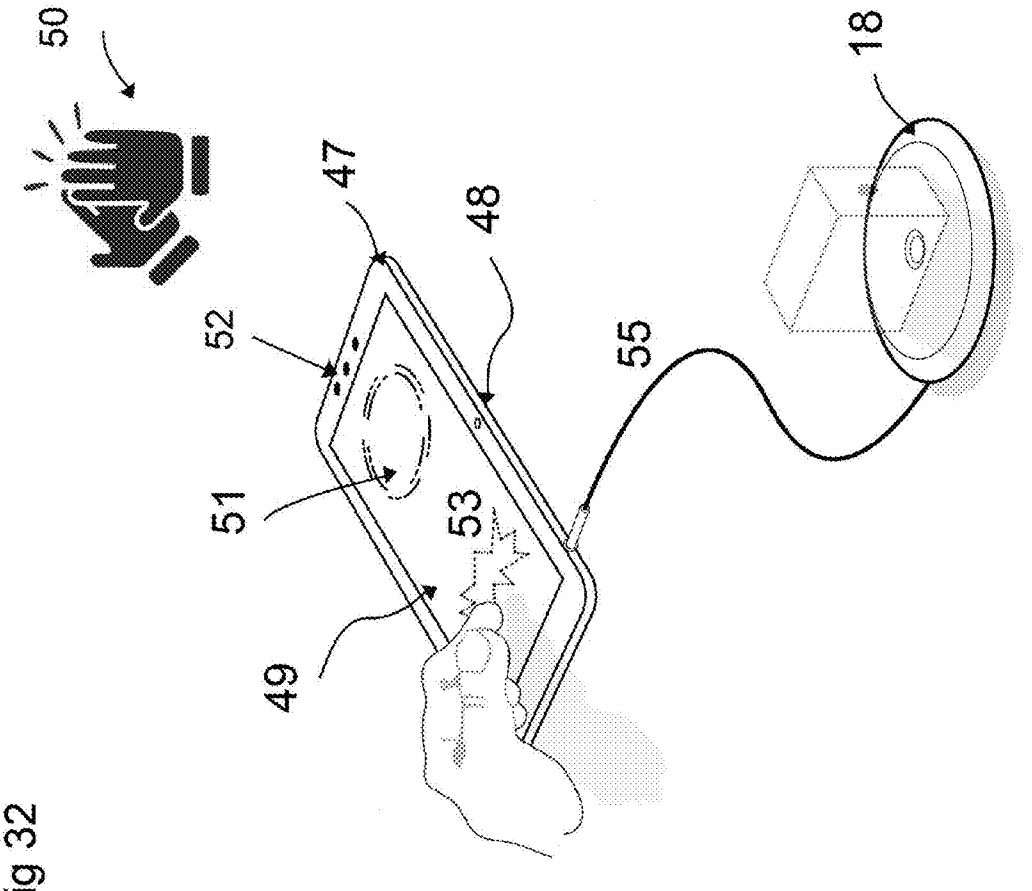

Fig 32

PROGRAMMABLE INTERACTIVE TOY

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] The present application claims priority on prior U.S. Provisional Patent Application Ser. No. 62/079,069, filed Nov. 13, 2014, which is hereby incorporated herein in its entirety by reference.

FIELD AND BACKGROUND OF THE INVENTION

[0002] The present invention is generally directed to toys, and more particularly to a toy figure(s) that can be programmed to perform a series of functions by interaction with a toy base device. As the child engages in planning which commands are best for achieving a variety of activities and actuating applying commands, and interacting with toy (and compatible accessories) during playback of the user applied commands, the child develops core STEAM skills. In essence, a toy figure retains traditional toy play patterns, which are brought to life and enhanced using the designated light source, generated from said toy base, or in a toy playset.

[0003] Teaching children how to code has become more important than in previous years, highlighted by the recent introduction of coding in the national curriculum as well as campaigns such as Code.org., with the likes of Bill Gates, Mark Zuckerberg amongst others, heading up this awareness campaign.

[0004] However, majority of coding platforms are screen based, such as on a computer or tablet or mobile phone. This is the same for current programmable toys, typically robots, educational toys and science kits; a heavy reliance on time spent staring at a screen. Specifically relating to the toy industry, current and future trends are 'smart' toys that are connected to an electronic base (with computer logic) or to a smart device (such as a tablet or smartphone, computer) to enhance the play experience. Connectivity to such devices may involve placing the toy onto the surface of the base, or onto screen of a smart device, or wireless. When connected, the toy(s) typically communicate, (either receiving and or transmitting data) and are recognized by the smart base/a gaming app within the tablet, allowing the user to play and interact with the app of the device using the specific toy character figures, e.g. NFC, QR Codes, Bluetooth and like systems.

[0005] However, conventionally available toys that interact with an electronic base require high cost wireless communication technology. Alternatively a toy that interacts and communicates with a smart device requires the toy to incorporate capacitive contact points and require the user to hold the toy at specific points, thereby significantly limiting their use and function. Additionally, the app-based toys, that are not remotely controlled, are typically in the form of static figurines incapable of being programmed or becoming interactive, as desired.

ASPECTS OF THE INVENTION

[0006] The present disclosure is directed to various aspects of the present invention directed to, without limitation, toys, toy figures, toy action figures, toy character figures, etc., real or virtual.

[0007] One aspect of the present invention is to provide a static toy or toy figure that can be animated or brought to life by interacting toy figure with an interactive toy base with relevant software which may also be further enhanced with connectivity to a smart device via an app. Further, the live action or animation can be varied, as desired.

[0008] Another aspect of the present invention is to provide a toy figure that can be rendered interactive to perform desired functions or actions, preferably represented by one or more of light, sound, motion, smell, shooting of solid/fluid/projectile, and the like.

[0009] Another aspect of the present invention is to provide a toy figure that can be programmed to perform desired functions or actions, preferably represented by one or more of light, sound, motion, smell, shooting of solid/fluid/projectile, and the like, by interaction with an interactive toy base with relevant software which may also be further enhanced with connectivity to a smart device via an app.

[0010] Another aspect of the present invention is to provide a toy figure that is compatible with an interactive toy base with relevant software which may also be further enhanced with connectivity to a smart device, such as a tablet, smartphone, etc., to receive, process and/or store instructions to perform the user-selected functions or actions.

[0011] Another aspect of the present invention is to provide recognition when a variety of compatible accessories is attached to programmable toy figure. This may be achieved by plugging in the accessory into the surface of the main programmable toy, in which a digital identification is triggered by a combination of mechanical and physical configurations within the main programmable toy.

[0012] Additionally, if programmable to is placed on smart device screen, the digital recognition recorded via means of image recognition and is fed back to user creating a magical and interactive experience. Examples may be a driver (toy accessory) slotting into a vehicle (main programmable toy figure) and being recognized as a particular character. Or a pilot (toy accessory) being inserted into the cockpit of a spaceship (main toy figure) and is registered as a pilot with a particular skill set.

[0013] Another example may be a robot warrior (main toy figure) with collectable weapons (accessory) which may incorporate a spring loaded projectile] to enhance user experience and fun.

[0014] The code input will then be affected and vary according to which accessory is digitally recognized. This will then affect code play back creating a unique play experience each time.

[0015] Another aspect of the present invention is to provide a toy figure that can be played with as a three-dimensional (3D) animated toy, or as its digital version/rendering on an electronic device, such as a tablet, smartphone, play-set, etc.

BRIEF SUMMARY OF THE INVENTION

[0016] The main toy figure is placed onto an interactive toy base designed with relevant software which may also be further enhanced with connectivity to a smart device, such as a tablet or smartphone. The toy base may be small or a large play-set. The figure is then "given instructions" preferably by means of light pulses from the toy base in accordance with the user's selections, in which input methods maybe be either or a combination of buttons and or sensors (such as motion sensors) and or detachable accessories and plays back or carries out these instructions when lifted off the electronic toy base or smart device, or toy play-set and placed onto any flat surface.

[0017] The toy figure is an interactive toy, which receives light pulses and converts them to code instructions, stores the code with, for example, internal flash memory, then reacts and performs a function(s), once placed onto a flat surface. Light pulse input is transmitted from an interactive toy base or a toy play-set, with relevant software or a smart device, by input means of control of buttons and or sensors and or detachable accessories. The toy figure may be able to calculate distance travelled by means of a digital counter, similar to a Tachometer with readings taken from a micro wheel protruding from the underside of toy, rolling across the flat surface. Another means of calculating distance travelled is using sensors.

[0018] The electronically toy figure is a modular unit, with mini sockets for attaching and plugging in compatible components to enhance playback features, such as animating the toy figure with additional motors. These components may consist of for example, or audio features (speakers), whilst using existing inexpensive technology, e.g., light sensors, located inside the figure, which responds to a variety of light pulses (light pulses=command/instruction to microchip onboard the toy).

[0019] In the case of directly interacting with a smart device, the toy figure is preferably recognized by simply using the camera on smart device. For additional play options i.e. when playing on screen, the toy figure can also be recognized by a mirror mounted over a camera of the smart device to reflect and capture the toy, as well as its location on the smart device. The recognition technology may be achieved augmented capture; unique marker is located on each toy figure and each toy accessory. Other means of recognition may be image recognition engine built into the programmable toy app.

[0020] The invention provides free handling during playback of programmed instructions without the requirement of pressing buttons to initiate playback sequence. Uniquely, if connected to a smart device, the toy will preferably have electronically moving parts that react to commands from an app. These may be various game features. These moving parts may comprise of slots allowing accessories to be mounted which enhance imaginative play

[0021] Playback output from the toy may be altered by plugging in a secondary accessory into the toy base prior to programming selection. These secondary accessories may affect the transmission of light source, altering either or a combination of the light pattern, brightness, or frequency of pulses.

BRIEF DESCRIPTION OF THE DRAWINGS

[0022] One of the above and other aspects, novel features and advantages of the present invention will become apparent from the following detailed description of a preferred embodiment(s) of the invention, as illustrated in the drawings, in which:

[0023] FIGS. **1**A-**1**B are perspective, schematic top and bottom views, respectively, of a toy or toy figure in accordance with a preferred embodiment of the present invention;

[0024] FIG. **2** is a schematic cross-sectional view of the toy figure of FIG. **1**, showing internal components;

[0025] FIG. **3** is a schematic illustration showing the toy figure of FIG. **1**, being placed on an electronic toy base or smart device, shown with two accessories;

[0026] FIG. **4** is a view similar to FIG. **3**, showing the toy figure not being affected by ambient light as the micro lever switch is not closed;

[0027] FIG. **5** is a view similar to FIG. **4**, showing an alternate embodiment for the toy figure recognition by the electronic device, using a detachable camera which is plugged into the electronic toy device;

[0028] FIG. **6** is a view similar to FIG. **4**, showing the child lining up the said toy for coding with aid of the toy figure location indicator on the electronic device;

[0029] FIG. **7** shows the toy figure placed on the location indicator of the electronic device and the device responding with feedback to indicate toy is in place ready for coding;

[0030] FIG. **8** is view similar to FIG. **7**, showing a user applying selected codes/commands with interactive feedback; feedback of each code which has been received is indicated with light/sound or a combination;

[0031] FIG. **9** shows the toy figure being lifted off the electronic device after having been programmed by the electronic device, and being placed on a selected play surface;

[0032] FIG. **10** shows the toy figure having been placed on the play surface with a short delay before playback;

[0033] FIG. **11** is a view similar to FIG. **10**, showing an output being generated by the toy figure in accordance with the user selected codes applied by the electronic toy device;

[0034] FIG. **12** is a view similar to FIG. **11**, illustrating the toy figure moving on the play surface as an example of an action/output;

[0035] FIGS. **13** and **14** are views similar to FIGS. **6-8**, showing a code altering accessory during the coding phase; FIGS. **15-17** are also similar to the sequence illustrated in FIGS. **6-8**, showing recognition of an accessory being attached to the toy figure and programming;

[0036] FIG. **18** shows placement of the toy figure with the attached accessory on the play surface;

[0037] FIG. **19** illustrates an example of an output generated by the selected accessory, as well as the toy figure itself, playing against another toy figure, itself in motion output;

[0038] FIG. **20** is a view similar to FIG. **11**, showing an action/output generated by the selected accessory;

[0039] FIG. **21** is a view similar to FIG. **12**, showing the motion of the toy figure with the attached accessory on the play surface as an example of an action/output;

[0040] FIG. **22** illustrates another example of an action/output generated by the selected spring loaded accessory;

[0041] FIG. **23** shows toy mounted with an accessory in a coded sequence of motion, triggering an additional separate accessory by being programmed to move in its direction;

[0042] FIG. **24** is a view similar to FIG. **23**, shows toy mounted with an accessory in a following a complex coded sequence in motion, triggering another separate accessory;

[0043] FIG. **25** is a view similar to FIG. **2**, showing internal components and closed micro switch;

[0044] FIG. **26** is a side perspective view of the toy figure of FIG. **1**, showing additional function input methods thereof;

[0045] FIG. **27** illustrates a schematic view of the toy figure of FIG. **2**, aligned over the coding spot of the electronic toy base, showing the switch lever in an open position;

[0046] FIG. **28** is a view similar to FIG. **27**, showing the toy figure placed on the display screen of the electronic device with the pressure switch closed and the coding light flash emanating from the electronic device;

[0047] FIG. **29** is a schematic flow chart illustration for coding or programming of a toy figure;

[0048] FIG. **30** illustrates a toy play-set for use in coding or programming of a toy figure in accordance with an embodiment of the present invention; and

[0049] FIG. **31** illustrates the play-set of FIG. **30**, being used to code or program a toy figure.

[0050] FIG. **32** shows an alternative aesthetic form of electronic toy base device connected with a wire (this may also be done wirelessly with an internal wireless module **31** FIG. **27**), preferable an embodiment cable with a 3.5 mm audio pin which is connected by the user to a smart device such as a smartphone **47**. The range of code inputs are herewith increased where a more visual programming experience is enhanced with motion graphics displayed **53** on the smart device screen **49**;

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT(S) OF THE PRESENT INVENTION

[0051] Referring to FIGS. **1**A-**1**B, **2** and **25**-**26**, a preferred embodiment of a toy figure in accordance with an embodiment of the present invention is described. In this regard, it is initially noted that although for clarity and ease of understanding, the toy figure has been illustrated schematically as a geometrical figure, the present invention covers various types of human/humanoid figures, animal figures, characters, and other objects, articles, shapes and figures, which may be fictional or non-fictional, real or virtual, mythical, biblical or non-biblical, historic, pre-historic, modern, robotic, hybrids, avatars, earth-borne or from outer space, now known or developed/found later, including, but not limited to planes, helicopters, ships, submarines, weapons, tanks, vehicles, armored vehicles, soldiers, sports figures, political figures, celebrities, etc.

[0052] As shown, the toy figure, represented by reference numeral **1**, includes a marker **2** on one or more sides thereof that is unique to the type of toy or figure and which is captured by, for example, the camera accessory **24** plugged into the electronic toy base **18**, and recognized thereof for identification and programming of the toy figure. The marker **2** can be a simple geometric figure, graphic, symbol or the like, or be an image representative of the toy figure itself. On the front side of the toy FIG. **1**, there is provided an accessory slot or opening **6** for receiving an accessory for adding more functionality to the toy figure, as described below in more detail. It is noted herewith that it is within the scope of the present invention to have a suitable connection or other mechanism, instead of the slot opening **6**, for the purpose of attaching a selected accessory.

[0053] As best shown in FIG. **26**, on the rear side of the toy FIG. **1**, there are provided a game play/play mode indicator **13** representing, for example, the number of lives remaining in the toy, an on/off switch **15**, and a code counter indicator **17** for indicating the codes having been uploaded to the toy FIG. **1**, or the remaining code allowance for uploading.

[0054] Referring now specifically to FIGS. **2** and **25**, the preferred components include a light sensor **3**, a suitable memory **4**, a microchip or logic module **5**, a code counter **16**, power source **12**, an electrical connection point for detachable devices such as optical receiver **9**, and a compartment **10** for accommodating various mechanical components to impart mechanical action/motion to the toy FIG. **1**. The light sensor **3** is optically open at the bottom for receiving codes preferably in the form of light pulses, from the toy electronic toy base device (see FIG. **28**) or compatible toy playset (see FIGS. **30**-**31**).

[0055] As best shown in FIGS. **1**B and **25**, a pressure switch, preferably including a mechanical lever **14**, is provided on the underside of the toy FIG. **1**. When the pressure switch **14** is closed such as when the toy FIG. **1** is placed on a surface (see FIGS. **10** and **28**, for example), the circuit connection from light sensor **3** to the code interpretation module **5** is temporarily joined, (not shown) and when lifted off the surface, the connection is temporarily broken. As shown in FIG. **1**A, a suitable display **11** indicates code entry by a user and functions as a feedback upon each code entry.

[0056] Referring to FIGS. **3**-**8**, an electronic toy device for use in the present invention will now be described. As shown, the electronic device is preferably a toy object **18** with a visual indicator **20**.

[0057] Coding input object(s) **23** such as buttons, or removable tiles or sensors are interacted with by the user **40** (see FIG. **8**). In order to facilitate proper placement of the toy FIG. **1** to receive codes **28**, a location guide icon/image/symbol **21** is present (see FIG. **6**). The indictor **20** will positive respond when toy is in place.

[0058] To further expand coding input interactive methods, (FIG. **32**) it is noted herewith that other electronic devices, such as a smartphone, tablets, a personal digital assistant (PDA), or the like may also be plugged in **55** to toy base device **18** where additional play enhancement is achieved with a broader range of input methods such as audio input, for example clapping **50** or a short verbalized code spoken into the microphone **52** as well as familiar touch interaction **53**. Additionally, similar to capture methods as in FIG. **5**, a digital version of the toy **51** may be generated by scanning toy FIG. **2** into an app or software. As noted above, the electronic toy device **18** includes a port where a camera accessory **24** may be attached for identifying a variety of toy figures and digitally registering the marker **2** within the internal microprocessor **26** and acknowledging the specific toy in current coding for customized play. FIG. **3** illustrates and example of two accessories **29** and **34**, their own unique identification marker **30** and **35** respectively to be scanned with similar methods. To that end, future versions of the recognition may incorporate image recognition technology, uniquely recognizing the actual toy aesthetics and form. In addition, the details of the toy FIG. **1**, such as background story, facts, and other related/desired information and statistics, etc. is highlighted **20** either with audio and or lights as shown by reference numeral **7** (see FIG. **7**). [For instance the particular details may mirror the characteristics of the relevant character from a TV show/film franchise. If the character from the children's show were a for instance a lion, the output **7** may be audio information such as 'roaring' sound effects and spoken out (via speakers of toy base), in a courageous voice. Another example is if the toy figure were a wrestler, there may be a short phrase from the relevant wrestling show, echoing his/her signature moves. Once the toy FIG. **1** has been placed on the indicated location **21** (FIG. **6**), the toy figure is ready to receive code and indicates when each code has been assigned (see FIGS. **7**-**8**).

[0059] Referring to FIGS. **3** and **22**-**24**, the aspect of an accessory for the toy FIG. **1** will now be described. In particular, FIG. **3** shows two accessories **29** and **34** that are different at least in terms of their functionality. For instance, the accessory **29** may represent a weapon, such as a sword, gun, or the like, while the accessory **34** may represent an arm

or wing, both for incorporating or attaching to the toy FIG. **1** for additional functionality. Depending upon the type of toy being used, or as desired by the user, various other accessory may be used. For instance, in a more educational expression, a jeep may go on a jungle safari with a characterized monkey driver. Similarly, a medieval warrior would likely charge on a horse with a spear or slingshot, while a modern soldier would likely be inside of, for example, a tank, armored vehicle, fighter plane, or ship, or the like with various automatic weapons. Thus, the accessories needed/used by the two would be different.

[0060] In FIG. **22**, the components represented by reference numerals **33** and **38** represent mechanical or other mechanism of the accessories **29** and **34**, respectively. In particular, the mechanical mechanism could be used to generate, for example, an output represented by an audio, video, light, action, shooting of projectile, etc., or a combination thereof.

[0061] Referring to FIGS. **30-31**, an embodiment of a play-set **44** that can be used to code or program the toy FIG. **1**, will now be described. In particular, the play-set **44** includes a suitable button **42** for initiating a coding or programming sequence. A coding pad **43** includes a light emitter **46** embedded in the center thereof for coding or programming of the toy FIG. **1**. When the toy FIG. **1** is positioned over the code pad **43**, light flash or the like **45** is generated for coding purposes. The play-set **44** may optionally include additional coding buttons at different locations thereof for initiating different codes for uploading onto the toy FIG. **1**. It is noted that the light emitter **46** will flash only when the toy FIG. **1** is placed onto the code pad **43**, as it preferably includes a pressure switch, which completes the light coding circuit (not shown).

Use and Operation

[0062] Having described a preferred embodiment of a toy figure in accordance with the present invention and an accessory thereof, a preferred manner of use and operation of same will now be described. Referring first to FIG. **29** and summarily speaking, a toy figure is placed onto the said electronic toy base **18**, ready to upload codes via a light source. A selection of desired codes each representing a different function or action to be carried out by the toy figure. Once the toy figure has been uploaded with the codes, it can be lifted off the electronic device and placed on a play surface to allow the toy figure to perform the functions dictated by the uploaded codes. In order to enhance play and user experience, one or more accessories may be used that add output functionalities of the toy figure.

[0063] As shown in FIG. **4**, the toy FIG. **1** is to be placed on designated location for accurate coding.

[0064] Next, the user **40** actuates code input method buttons/sensors **23** to choose the codes, the entries of which is visually displayed by the indicator **11** on the toy FIG. **1**. It is noted herewith that, as shown in FIG. **27**, prior to being placed on the electronic device **18**, the switch lever **14** is in the open position. One skilled in the art would appreciate when the toy figure is placed on the screen **20** of the electronic device **18**, the lever **14** would pivot and close, thereby completing circuitry within the toy figure.

[0065] As the user selects the codes by actuating the input methods **23**, the electronic toy base **18** initiates a light pulse sequence **45** (see FIG. **28**), that is received by the sensor **3** of the toy FIG. **1** and is processed by the logic module **5**, which converts the pulse data into action codes to release preprogrammed actions. These commands are stored in the on-board memory **4** for playback. Preferably, one set or sequence of pulses from the electronic toy base device **18** equals to one code; and, each code preferably translates into one action or function to be displayed or carried out by the toy FIG. **1**. It is noted herewith that instead of light pulses, alternative technology, such as electromagnetics, may be used for coding/programming of the toy FIG. **1**.

[0066] As noted above, an internal counter **16** tallies the codes being uploaded and displays the remaining code allowance at the indicator **17** (see FIGS. **25-26**). Once the toy FIG. **1** has been uploaded with the selected codes, it is simply lifted off the surface of the electronic toy base **18** and placed on a suitable play surface **39** (see FIG. **9**). One skilled in the art would appreciate that once the toy figure is lifted off, the switch **14** opens meaning any background/ambient light is not received by the logic module **5**. Once the toy FIG. **1** is placed on the play surface **39**, the switch closes and a short countdown (preferably three-five seconds) is initiated for playback (see FIG. **10**). In other words, there is provided a short electronic delay for playback and the toy figure remains in "standby" mode during this time.

[0067] Once the countdown is completed, the stored codes are activated and the toy figure displays an output **41** in the form of one or more of light, sound, motion, smell, action, shooting of a projectile, etc. As shown in FIG. **12**, the output **41** can also be in the form of the toy figure moving about the play surface **39**.

[0068] Referring to FIGS. **15-24**, the use and application of an accessory will now be described.

[0069] The toy FIG. **1** is placed on the electronic toy base **18**, as described above. An accessory **29** may be recognized and captured by the toy FIG. **1**. The accessory **29** is then inserted into the slot or opening **6** in the toy FIG. **1**.

[0070] As shown in FIG. **16**, in the same manner as uploading the codes to the toy FIG. **1**, described above, one or more codes for the accessory **29** are then selected and uploaded by actuating the button **23** (see FIG. **17**).

[0071] As shown in FIG. **18**, the toy FIG. **1**, with the accessory **29** attached thereto, is then placed on the play surface **39** where, after a brief countdown sequence, the accessory **29** displays the output **41**A based on the uploaded codes. As noted above with regard to the toy FIG. **1**, the output may be a combination of light, audio, motion, smell, firing of projectiles, etc. (see FIGS. **19-20** and **22**). The accessory **29** may also impart to the toy FIG. **1** an output **41**A in the form of a movement on the play surface **39** (see FIG. **21**). Another accessory **34** may be connected to the toy FIG. **1**, FIG. **3** depicts that is different from the first accessory **29** in terms of theme, character, aesthetics, functionalities, power, etc.

[0072] FIGS. **23-24** highlight the toy FIG. **1** in motion following a programmed sequence of codes of which the toy FIG. **1** makes contact to trigger mini playset mechanisms.

[0073] It is noted herewith that although the invention is described in terms of a toy figure, it includes, without limitation, toys, toy action figures, toy character figures, etc., real or virtual, now known or discovered/known later.

[0074] While this invention has been described as having preferred sequences, ranges, ratios, steps, order of steps, materials, structures, symbols, indicia, graphics, color scheme(s), shapes, configurations, features, components, or designs, it is understood that it is capable of further modifications, uses and/or adaptations of the invention following in general the principle of the invention, and including such

departures from the present disclosure as those come within the known or customary practice in the art to which the invention pertains, and as may be applied to the central features hereinbefore set forth, and fall within the scope of the invention and of the limits of the claims appended hereto or presented later. The invention, therefore, is not limited to the preferred embodiment(s) shown/described herein.

1) A programmable toy unit comprising of:

A body that includes a multitude of components;

An object light sensor such as photoresistor to receive light pulses, an object logic such as a microprocessor to interpret and translate light data into code, an object Internal Memory to stores codes sequence(s) a connection socket to attach a variety of compatible accessories, an object component to identify the location driver wheel may be part of a location system consisting of a sensor or micro wheel, a Socket(s) for additional electronic devices such as a camera, infrared emitter and receiver, output components activated during playback of stored codes, output methods may include either or a combination of lights, audio and or trigger accessories which may be either or a combination of LEDs, speaker(s), motor(s), an object power supply such as rechargeable batteries, an object component to indicate when each code has been received; this object indicator may be a combination of not limited to lights/speakers, an object digital component which feedback current play status such as learning progress, stages in a game etc., an object micro lever switch which may be mounted higher internally within the said toy housing then triggered by a movable mechanical component, such as the underside chassis of a car which is electronically connected to control power flow to circuit to alternate the variable states, an object power saving component with an object switch, an object code accumulator digitally counted and interpreted by said microprocessor, an object capture marker to identify said toy unit which may be in the form of an illustration such as a related sticker or said capture marker may also be an electronic tag such as NFC.

2) A claim of:

A body that includes a components primary to act as a controlled light source which will communicate with said toy unit figure as in claim **1**);

An object body; used to program the said toy unit by means of varied light pulses directed at the said toy unit, specifically at the object light sensor, typically a photo resistor, may be applied whilst toy object is placed onto.

3) A claim of:

Said toy figure responds to coding method of claim **2**) when laid down onto any plain flat surface, with output in varied forms such as motion, lights sounds or a combination of above.

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