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(54) **AUTONOMOUS TOY CAPABLE OF TRACKING AND INTERACTING WITH A SOURCE**

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(57) **ABSTRACT**

A mechanized, movable toy with the ability to interact with and explore its environment, while performing actions and creating noises at specific intervals. The toy has at least two receivers and a control unit capable of detecting wireless signals from a source and capable of reacting to move towards the source of the wireless signals. Once the toy enters within an area of the source, the toy performs a new action. The source may be a stationary device, handheld device, movable device, or another mobile toy. The toy may contain switches thereupon to switch the toy on or off. The receivers may be arranged in and around the toy to detect the wireless signals from one side of the toy or another.

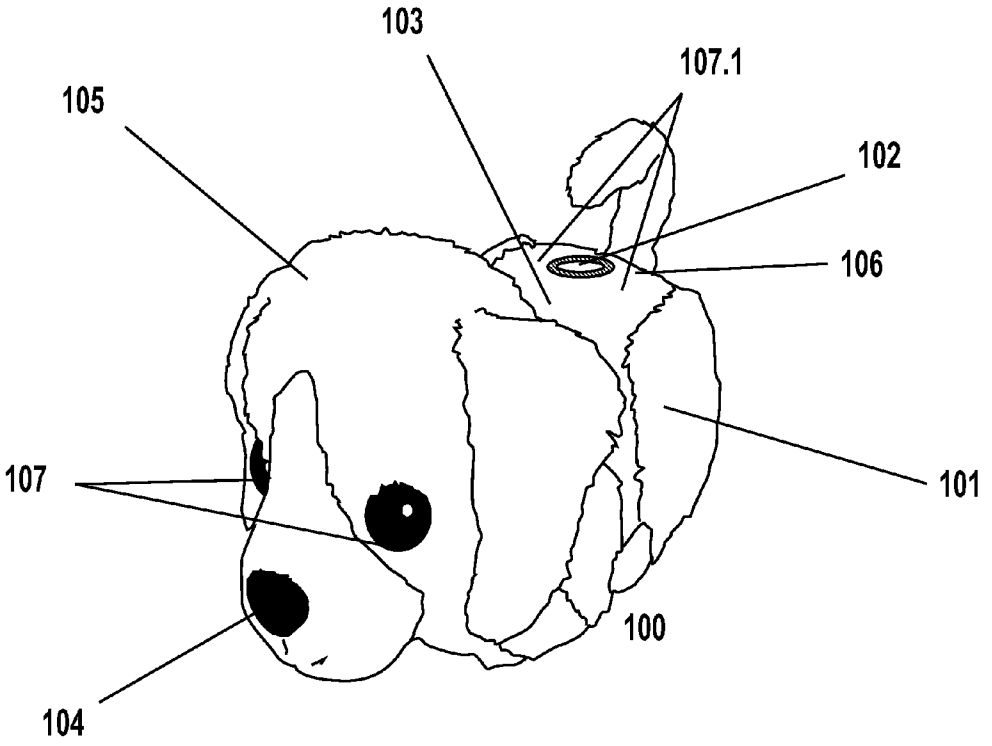


Fig. 1

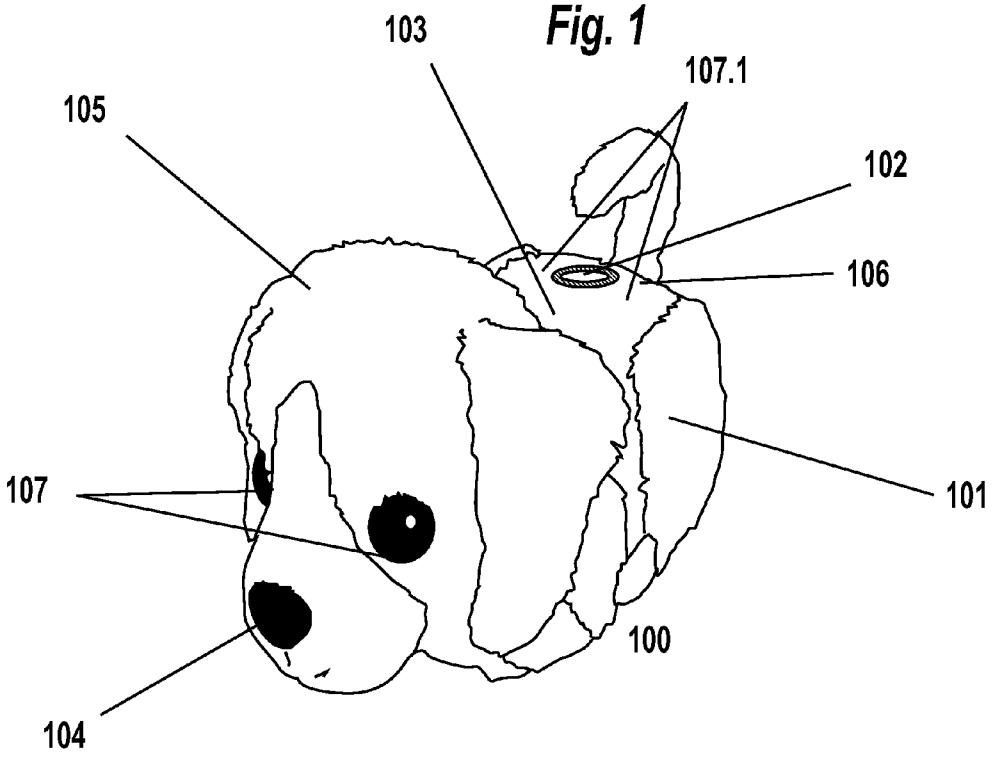
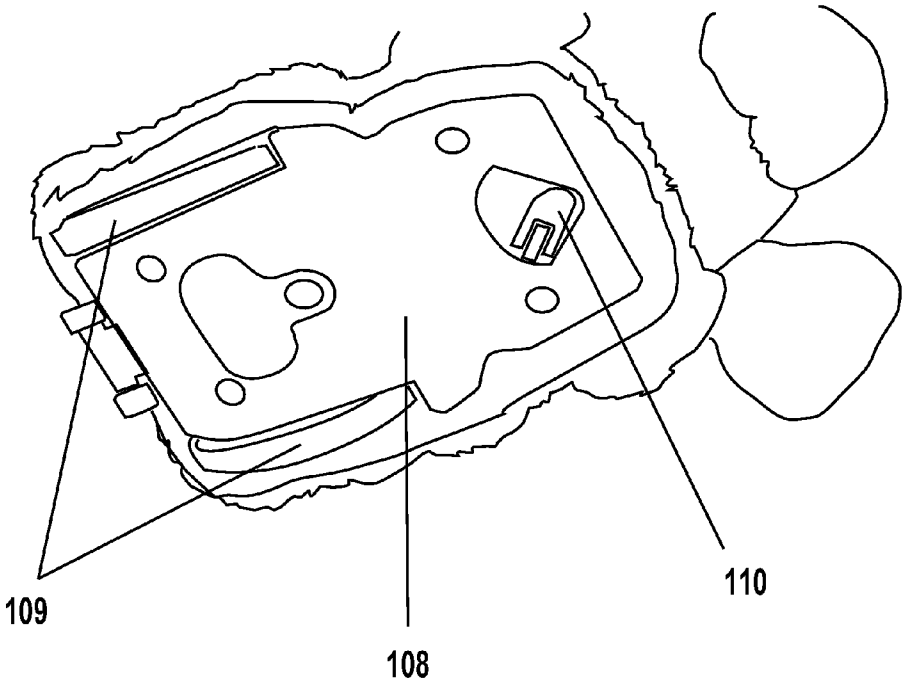


Fig. 2



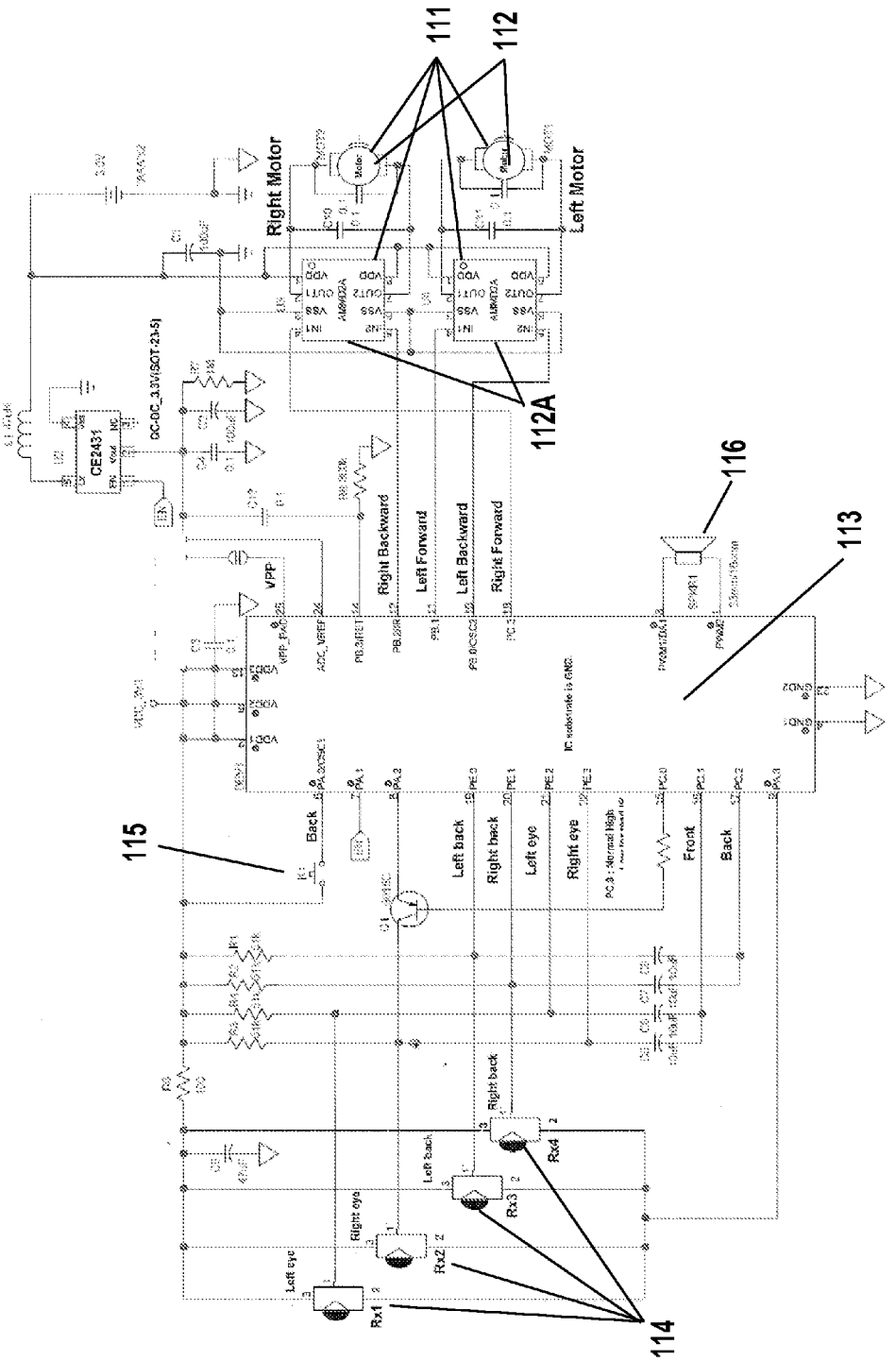

111
112
Right Motor
Left Motor
112A
116
113
115
114
Right Backward
Left Forward
Left Backward
Right Forward
Left back
Right back
Left eye
Right eye
Front
Back
Rx1
Rx2
Rx3
Rx4

Fig. 3

Fig. 4

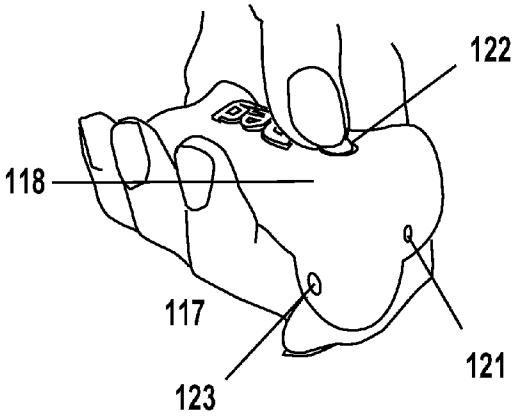


Fig. 5

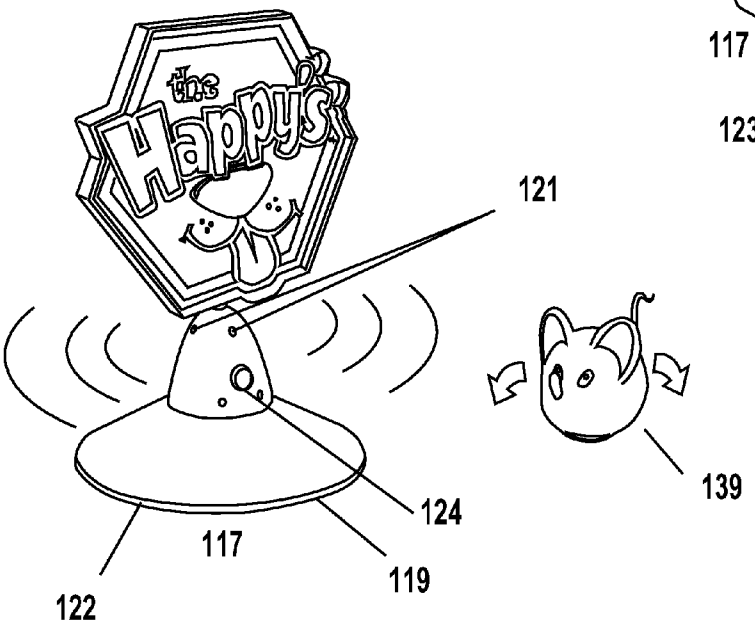
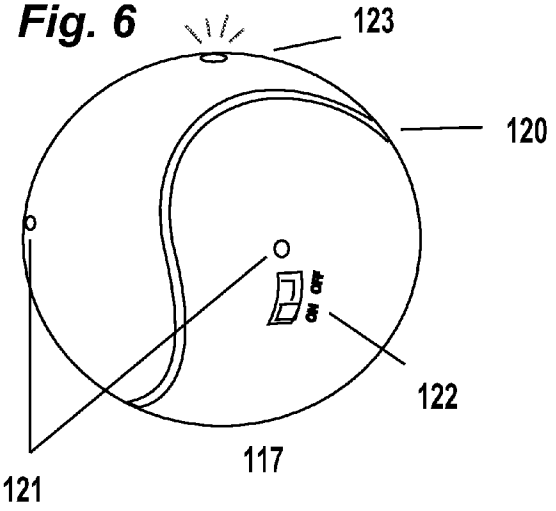


Fig. 6



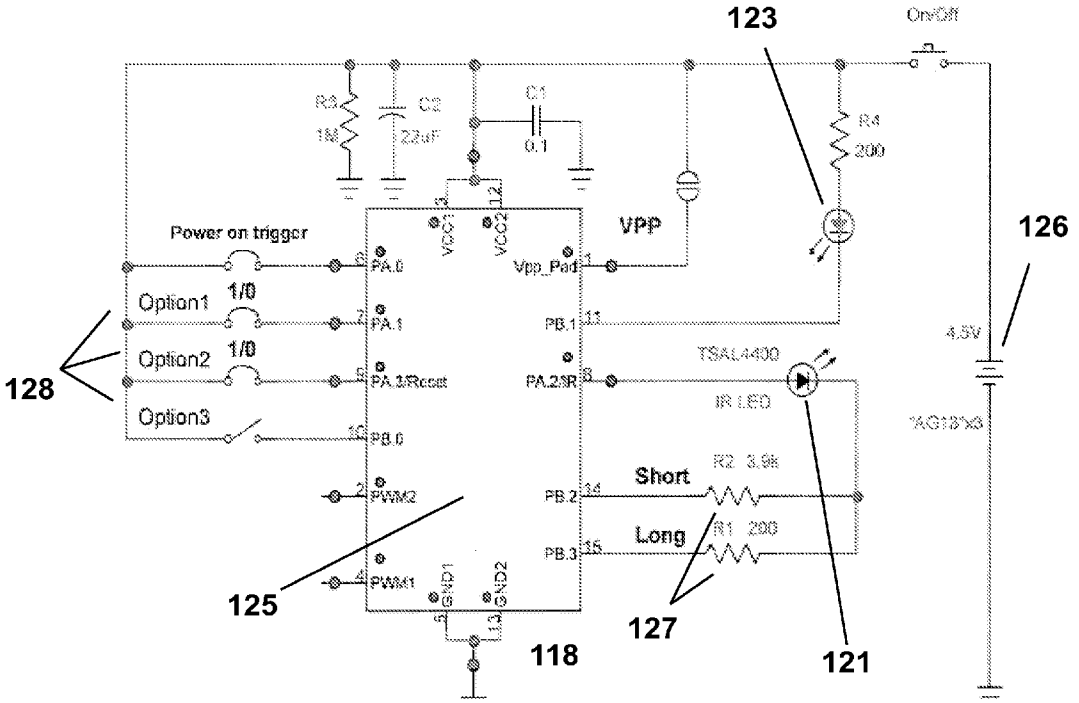

123
On/Off
R3
1M
C2
22uF
C1
0.1
R4
200
VPP
Power on trigger
Option1
1/0
Option2
1/0
Option3
128
PA.0
PA.1
PA.3/Reset
PB.0
PWM2
PWM1
GND1
GND2
VCC1
VCC2
Vpp_Pad
PB.1
PA.2/IR
TSAL4400
IR LED
Short
R2 3.9k
Long
R1 200
PB.2
PB.3
125
127
118
121
126
4.5V

Fig. 7

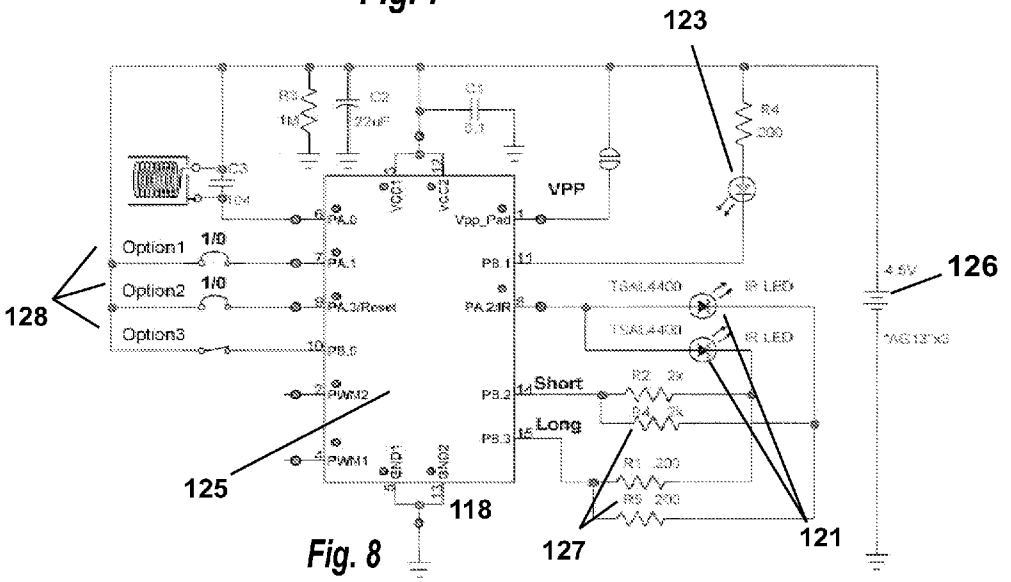

123
R3
1M
C2
22uF
C1
0.1
R4
200
VPP
Option1
1/0
Option2
1/0
Option3
128
PA.0
PA.1
PA.3/Reset
PB.0
PWM2
PWM1
GND1
GND2
VCC1
VCC2
Vpp_Pad
PB.1
PA.2/IR
TSAL4400
IR LED
TSAL4400
IR LED
Short
Long
R2 3k
R1 200
PB.2
PB.3
125
127
118
121
126
4.5V

Fig. 8

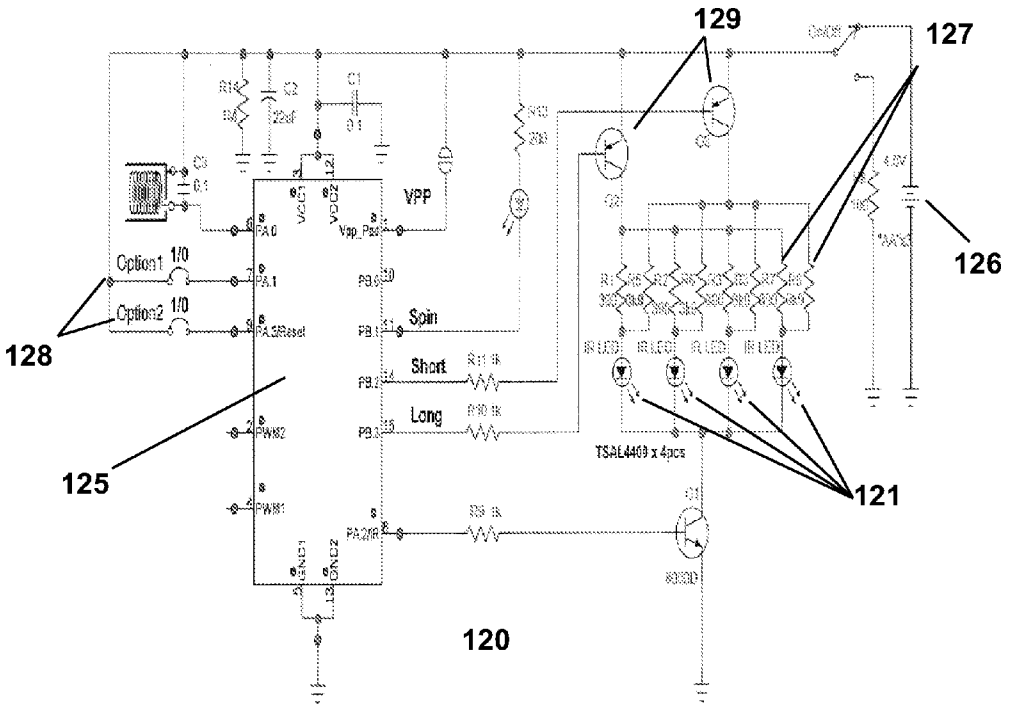

129
127
126
128
125
121
120
VPP
Option1 1/0
Option2 1/0
Spin
Short
Long
TSAL4400 x 4pcs

Fig. 9

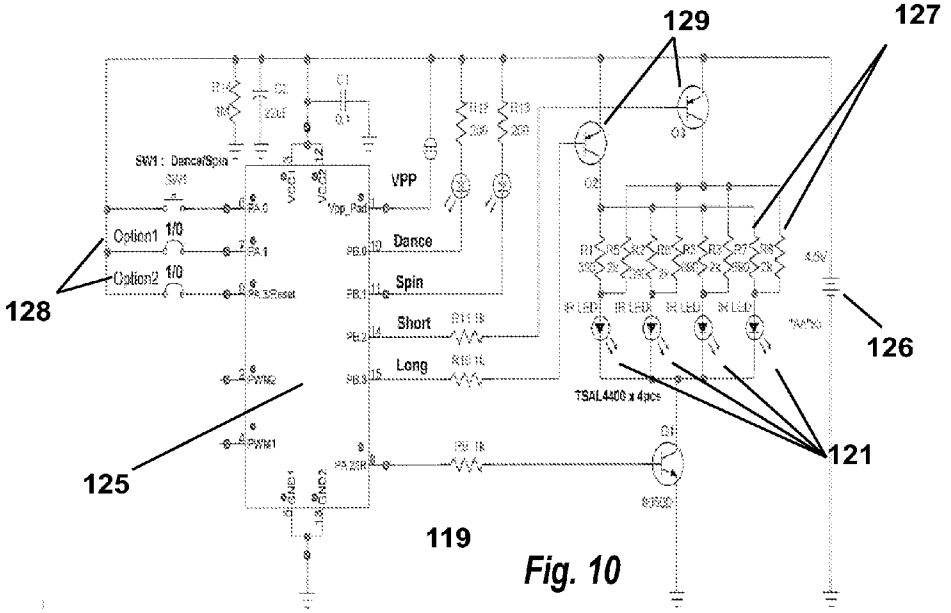

129
127
126
128
125
121
119
VPP
Option1 1/0
Option2 1/0
Dance
Spin
Short
Long
TSAL4400 x 4pcs

Fig. 10

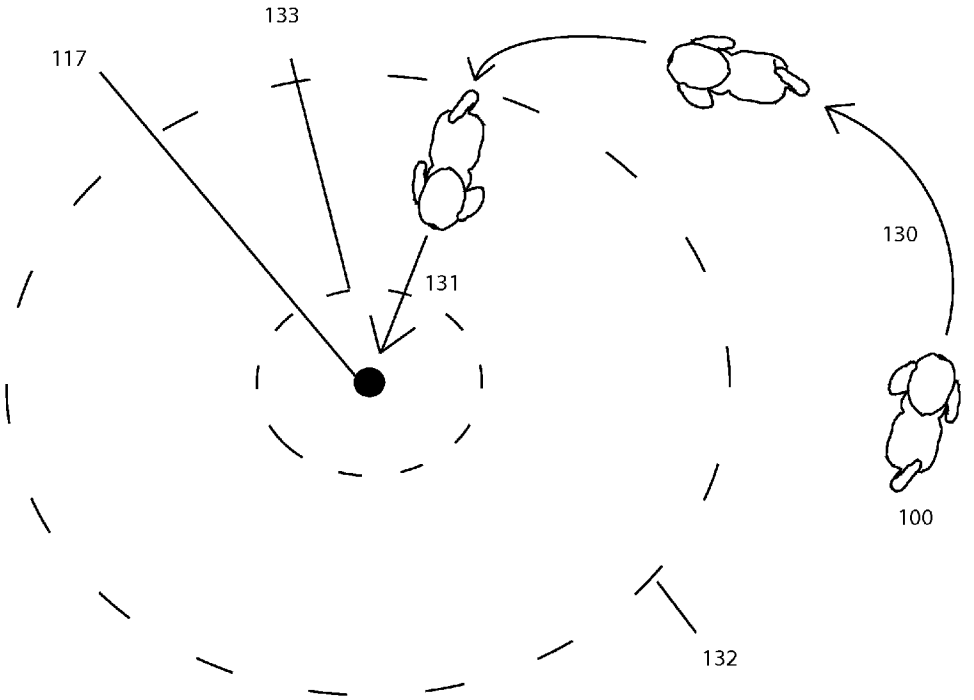


Fig. 11

Fig. 12

Fig. 14

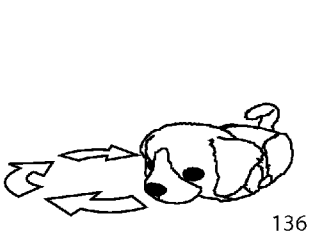


Fig. 13

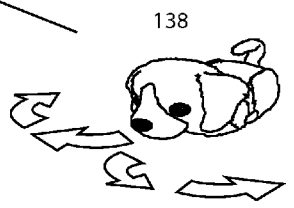


Fig. 15

AUTONOMOUS TOY CAPABLE OF TRACKING AND INTERACTING WITH A SOURCE

RELATED APPLICATIONS

[0001] This application claims priority to U.S. Provisional Patent Application No. 61/907,635 filed Nov. 22, 2013, which is hereby incorporated by reference in its entirety.

FIELD

[0002] The present invention relates to toy entertainment devices, and more particularly to motorized, movable toys.

BACKGROUND

[0003] Motorized toy vehicles are popular among children because they allow the children to imitate a real life action, such as driving a car or the movement of a pet. Normally, these toys are controlled remotely through a hand held control and the child inputs physical commands directing the toy to move a specific direction by pressing a button or using a joystick. Children enjoy controlling remote cars, and enjoy playing with toys that operate autonomously. Children also enjoy autonomous vehicles that mimic real-life play of animals or real-life driving actions of vehicles. However, there is a need for a toy that can interact with its environment and perform an action in response to stimuli while being able to track an object in a playful manner, similar to a real pet or a real vehicle interacting with an object.

SUMMARY

[0004] The present disclosure is directed to an autonomous toy that is capable of exploring its environment. In an exemplary embodiment, an interactive toy and a wireless signal source are provided. The interactive toy is capable of moving autonomously in its environment through movements controlled by control circuitry of the toy. The exemplary embodiment further includes a source of a wireless signal which is physically separate from the toy. The interactive toy includes two or more sensors capable of detecting the at least one wireless signal, and control circuitry that is capable of analyzing the wireless signal detected by the sensors and directing the toy towards a source of the wireless signal. The toy performs a trick once the toy is within a predetermined distance of the source of the wireless signal, wherein the toy is capable of performing more than one trick when within the predetermined distance of the source, and the trick performed is determined by the wireless signal emitted by the source of the wireless signal.

DRAWINGS

[0005] The drawings described herein are for illustrative purposes only of selected embodiments and not all possible implementations, and are not intended to limit the scope of the present disclosure.

[0006] FIG. **1** is an angled font perspective view of the toy according to one embodiment of the present disclosure;

[0007] FIG. **2** is a bottom perspective view of the toy according to one embodiment of the present disclosure;

[0008] FIG. **3** is a schematic diagram of the toy according to one embodiment of the present disclosure;

[0009] FIG. **4** is an angled front perspective view of the handheld source according to one embodiment of the present disclosure;

[0010] FIG. **5** is an angled front perspective view of the stationary source according to one embodiment of the present disclosure;

[0011] FIG. **6** is an angled front perspective view of the movable source according to one embodiment of the present disclosure;

[0012] FIG. **7** is a schematic diagram of the handheld source according to one embodiment of the present disclosure;

[0013] FIG. **8** is a schematic diagram of the handheld source according to one embodiment of the present disclosure;

[0014] FIG. **9** is a schematic diagram of the stationary source according to one embodiment of the present disclosure;

[0015] FIG. **10** is a schematic diagram of the movable source according to one embodiment of the present disclosure;

[0016] FIG. **11** is a diagram of a pattern of movement of a toy and source in operation with each other;

[0017] FIG. **12** is an angled front view of a toy performing a trick according to one embodiment of the present disclosure;

[0018] FIG. **13** is an angled front view of a toy performing a trick according to one embodiment of the present disclosure;

[0019] FIG. **14** is an angled front view of a toy performing a trick according to one embodiment of the present disclosure;

[0020] FIG. **15** is an angled front view of a toy performing a trick according to one embodiment of the present disclosure.

[0021] Corresponding reference numerals indicate corresponding parts throughout the several views of the drawings.

DETAILED DESCRIPTION

[0022] The present disclosure describes various embodiments in detail herein below with reference to the embodiments. It should be understood that the invention is not limited to the specific configurations shown and described in these embodiments, rather, one of skill in the art will appreciate that a variety of configurations may be implemented in accordance with the present invention.

[0023] In an exemplary embodiment, an interactive toy and a wireless signal source are provided, where the interactive toy includes a cover. The cover of the toy is in the shape of a dog or kitten; however, the shape may be in any form such as a car, robot, or spaceship. Construction of the toy may be from a wide variety of materials such as, but not limited to, plastic or plush fabric. The toy contains at least one motor capable of turning wheels forward and backward. The toy's exploratory movements are based on a predetermined path providing sounds and movements in timed sequences. Additionally, the toy is capable of receiving a wireless signal or signals from a source and interrupting its predetermined path by performing new actions, such as moving towards the source of the signals. Further, when the wireless signal or signals reach a certain strength or density, or the toy moves within an area to receive a second signal or signals, a new reaction or behavior is performed such as a dog performing a trick. The wireless signal may be a light source, such as infrared light. The

receivers may be arranged to detect a signal from different sides of the toy, such as being arranged on the front, back, or sides of the toy.

[0024] As the toy is in active use, the toy explores its environment, moving in straight or curved lines in multiple directions, while performing actions and sounds in predetermined time intervals and in response to stimuli or obstacles in the environment. Once the toy detects a wireless signal, the toy reacts by moving towards the wireless signal. Then, once it reaches a predetermined distance from the source of the wireless signal, the toy performs a new action, such as a trick. The toy may interact directly with the source in a new way extending the play such as a dog chasing a ball, finding the ball, rising up on its rear wheels and engaging the ball by pushing it away, then chasing the ball again to repeat the play. All without user input. This creates the impression that the toy, such as a dog or car, is self-aware and acting like a real life item, such as a pet or car with a driver. The wireless signals may be detected by a receiver on one side of the pet, causing the pet to turn towards the signal, and then turn again if the signal is detected on another side of the pet, this turning and movement will continue until either the signal strength of the wireless signal reaches a certain strength denoting a distance from the source; or the toy moves within an area where a second signal is received by the toy. The action upon reaching a specific distance from the source may include a trick, such as spinning, rising up on its rear wheels (popping a wheelie), or another action. Additionally, a sound may be made at this predetermined distance. However, a trick involves something more than simply a sound. The source of the wireless signal may be a handheld device, a stationary device, a device with the ability to move (such as a ball), or another vehicle, such as another pet.

[0025] The toy comprises: (1) a motive component having a drive mechanism, receivers, and circuitry, with the circuitry configured to control the drive mechanism, respond to user inputs, perform tricks or generate predetermined sounds at specific times, and respond to detected wireless signals directing the drive mechanism to move the toy towards the source of the wireless signals; (2) a source of wireless signals having the ability to output a first wireless signal that can be detected by the toy causing it to move toward the source of the wireless signal, as well as the ability to provide a second signal to cause a reaction by the toy **100** at a certain distance from the source.

[0026] 1. Cover

[0027] The cover **101**, shown in FIG. **1**, is configured to resemble a puppy dog or kitten with fur, eyes, ears, nose, whiskers, and tail. It should be noted that this cover could depict any object, such as any other animal, an alien, a ground transportation vehicle or a flying vehicle. The cover may be made of any material, including plush fabric, plastic, any polymer, any textile material, or metal. At least one switch **102** is positioned on the cover **101** such that the switch may be activated through pressure applied to the corresponding area of the cover. The switch may be embedded in the cover or raised above the cover. Operation of the control switch provides a signal to the control circuitry of the toy to perform a specific action.

[0028] At least one switch **102**, located on the top or back **103** of the toy **100**, is able to take the toy **100** from "sleep mode" to "explore mode", wherein the toy **100** begins to move about and make noises. There may also be other switches embedded or raised above the cover, on the front **104**, head **105**, or rear **106** of the toy **100**. These additional switches might be capable of causing the toy to activate, create noises, or otherwise perform an action.

[0029] The cover **101** has at least one receiver **107** embedded in the front **104** therein to receive wireless signals. The front **104** of the toy cover could consist of two receivers **107** in the shape of eyes capable of receiving wireless signals. These receivers would preferably be able to detect light signals and particularly, infrared signals. Additionally, the cover **101** may have two areas in the rear **106** of the toy capable of permitting a wireless signal, such as infrared light, to pass through the cover to a receiver, such as an infrared receiver.

[0030] 2. Chassis

[0031] As shown in FIG. **2**, the chassis **108** is generally made of a plastic, though it may be made of metal or another material. Two wheels **109** sit in the back of the chassis. The front of the chassis **108** may consist of one wheel **110**, a third wheel, with the ability to articulate around a pin. It should be understood that there may be more or less than three wheels. For example, this same invention may be used with an 18 wheel truck, or a bicycle, as well as a four wheel vehicle.

[0032] The rear wheels **109** may be larger than the front wheel **110** or other wheels on the chassis **108**. Further, the center of gravity of the toy may be placed over the back wheels **109**, or near the back wheels, to assist in causing the toy to ride only on the back wheels in certain instances. It should be understood that the center of gravity may be placed in several areas of the vehicle to provide the ability to lift the vehicle onto two wheels at a given instance. For example, the center of gravity could be placed on one side of the vehicle to allow the vehicle to ride on its side.

[0033] 3. Drive Mechanism

[0034] The drive mechanism **111**, as shown in FIG. **3**, is located in the rear of the chassis **108**, though it could be located at any part of the toy **100**. It includes at least one motor in mechanical communication with the rear wheels **109** capable of turning the wheels forwards or backwards. There may also be two motors **112** each capable of turning one wheel forwards or backwards. The motor is controlled by the control circuitry of the toy which provides power to the motor. This control circuitry is able to change the command signal thereby driving the motor in a forwards or backwards direction.

[0035] The drive mechanism may include the motors **112** and the motor controllers **112**A. The motor controllers **112**A communicate with the integrated circuit **113** of the toy and control the motor **112** in its movements. It should be noted that a motor controller is not necessary for the invention and such movements may be controlled by an integrated circuit alone. An example of a motor controller is the AMMD2A by Alpha Microelectronics Corp.

[0036] The drive mechanism **111** of the toy with two motors **112** is capable of spinning the motors at different rates and in different directions to allow the toy to turn or spin. The drive mechanism is capable of turning both wheels at a fast pace or a slow pace. Further, the wheels may be turned such to cause the toy to ride only on two rear wheels (pop a wheelie) or perform other tricks as shown below.

[0037] 4. Control Circuitry of the Toy

[0038] The control circuitry of the toy includes an integrated circuit **113** on which may sit a microcontroller. The integrated circuit **113** of the toy has input connections to at least one receiver **114** and at least one switch **115** (shown in

FIG. **1** as **102**). The integrated circuit **113** of the toy **100** has output connections to a speaker **116** and at least one motor **112**.

[0039] The integrated circuit **113** of the toy **100** has programming written thereon which allows the toy to move about and explore its environment. This programming is located on the memory of the integrated circuit **113** of the toy **100** and sets forth a specific set of instructions the toy follows when in "explore mode." This may include a list of movements driving the motors **112** forward and backward at different rates causing the toy to move in straight and curved lines around an area. This may also include a list of sounds to be output from the speakers **116**, in conjunction with the movements or separate from the movements.

[0040] The integrated circuit **113** of the toy **100** has inputs from receivers **114** (shown in FIG. **1** as **107** and **107.1**) and at least one switch **115**. In a preferred embodiment, there would be at least four receivers **114**. The receivers **114** are capable of providing input to the integrated circuit **113** of the toy **100** such that each receiver **114** is read separately by the integrated circuit of the toy. The switch can place the toy in "explore mode" or "sleep mode". When in "explore mode" the toy moves under a predetermined set of commands which are directed by the integrated circuit. When the receivers **114** detect a signal, they send inputs to the integrated circuit **113** of the toy **100**. The integrated circuit **113** of the toy **100** reads the inputs and then directs the motors **112** to move the toy **100** towards the source **117** of the wireless signals. When the toy **100** is within a predetermined distance **133** from the source **117**, the receivers **114** are able to receive a second wireless signal, which the receivers **114** input to the integrated circuit **113** of the toy **100** and direct the motors **112** to perform a trick **134**. The software of the integrated circuit **113** of the toy **100** is able to provide the specific actions the toy **100** will perform.

[0041] The integrated circuit **113** of the toy **100** controls motor or motors **112** and controls the voltage and current output to the motor. The integrated circuit **113** of the toy **100** is able to switch signals provided to drive the motors **112** in either the forward or reverse directions to control the movement of the motive component.

[0042] A switch **115** or switches act as inputs to the control circuit of the toy providing input by the user. If additional switches are used, these switches may also act as inputs from obstacles or other components depending on their placement. For example, where another switch is on the front of the toy it may be depressed when hitting an obstacle at the front of the toy. Pressing the switch **115** on the back **103** of the toy inputs to the integrated circuit **113** of the toy that the toy **100** is either in "sleep mode" or "explore mode". Pressing the switch and placing the toy in "explore mode" causes the toy **100** to enact a script of movements and noises which mimic the actions of a toy exploring its surroundings.

[0043] 5. Receivers

[0044] The receivers **114** are capable of receiving wirelessly emitted signals and transmitting those signals as inputs to the control circuitry of the toy **100**. The receivers **114** may be capable of receiving multiple different signals including, but not limited to, electromagnetic radiation signals (radio waves, microwaves, infrared radiation, visible light, ultraviolet radiation, X-rays and gamma rays) or audio signals. These receivers **114** may be sensors capable of detecting analog or digital signals. Preferably, the receivers **114** are capable of detecting infrared signals. These sensors may detect infrared signals through a band-pass filter, such that they are able to detect infrared light from a particular frequency range.

[0045] The invention is not limited in the number of receivers that could be placed on the toy **100** or the location of receivers **114** that may be placed on the toy **100**. Preferably, at least two receivers **107** will be placed on the front **104** of the toy **100**. These receivers may be in the form or appearance of eyes at the front of a vehicle. Further, preferably, at least two receivers **107.1** may sit at the rear **106** of the toy. The rear receivers may sit under the cover, with the infrared signal capable of reaching the receivers through the cover. An additional receiver or receivers may be placed on the top or back of the toy to note wireless signals directed to the top of the toy.

[0046] The receivers **114** would be understood by the control circuit of the toy and would provide an input to the integrated circuit **113** of the toy **100** such that the motors **112** would be driven to drive the toy in different directions. Preferably, the receiver (one of those at **114**) detecting a wireless signal, such as an infrared signal, would then provide information to the control circuitry of the toy to drive one of the motors **112** slightly more than the other to turn the toy in the direction of the wirelessly emitted signal.

[0047] Preferably, the receivers **114** are capable of receiving modulated wireless signals with different instructions encoded therein, or capable of reading wireless signals at different frequencies. In a preferred embodiment, the receivers are capable of receiving multiple frequencies or modulations of infrared signals and able to transmit those signals to the control circuitry of the toy **100**. The control circuitry of the toy **100** is then capable of distinguishing between the different modulated infrared signals and can control the motors **112** of the toy to perform actions, such as moving towards the source **117** or performing tricks **134**.

[0048] 6. Source

[0049] The source **117** of the wirelessly emitted signal, as shown in FIGS. **4**, **5**, and **6**, may be of any shape or any size. Preferably, it would be in the form of a hand held source **118**, a stationary source **119**, or a moveable source **120**, such as a ball. The source would have at least one emitter **121** that emits the wireless signal, but may have many emitters **121** therein. Preferably, the source would have a switch or button **122** that would allow the source **117** to be turned on or off. Further, this source **117** could have an indicator light **123** to indicate that it is on and sending out a wireless signal.

[0050] Preferably, the handheld source **118** of FIG. **4**, could be in the form of something the toy would be attracted to, such as, but not limited to, a treat. The handheld source **118** could have any number of emitters **121**. Preferably, the handheld source **118** would have a single emitter **121** placed at the front of the device. This would permit the signal, such as an infrared signal, to exit the source in a single direction so one could lead the toy **100** in a direction without the toy **100** being drawn in another direction.

[0051] The stationary source **119** of FIG. **5**, could be in the form of, but not limited to, a stand with a sign or flag. The stationary source **119** could have any number of emitters **121**. The stationary source **119** preferably has four emitters **121**, one facing out in each direction for the middle height of the stationary source. Further, the stationary source **119** is capable of changing the signal it is sending to the toy through a switch or button **124**. This change would cause the toy **100** to perform a different trick **134** when the toy **100** comes within a predetermined distance **133** of the source **117**. The

stationary source switch **122** is not explicitly shown, but could be on the underside of the stationary source.

[0052] The movable source **120** of FIG. **6**, could be in the form of something the toy would normally play with, such as, but not limited to, a ball or a roll of yarn. The movable source **120** preferably has emitters **121** arranged around the ball at different locations such that the wireless signal, such as an infrared signal, is capable of being transmitted in different directions regardless of the position of the ball. In one embodiment, there could be four emitters **121** placed on each outward side of the ball in a single plane from its stationary position. Additionally, the ball could have five emitters with four emitters along a plane and an emitter on top of the ball. Further, the ball could have six or more emitters spread around the ball.

[0053] 7. Control Circuitry of the Source

[0054] The source **117** of the wireless signal may contain a wireless signal emitter **121** and an integrated circuit **125** connected to a power source **126**. The integrated circuit **125** of the source **117** may provide the programming necessary to control the emitter **121**.

[0055] In a preferred embodiment, the control circuitry of the handheld source **118**, as shown in FIGS. **7** and **8**, the stationary source **119**, as shown in FIG. **10**, and the movable source **120**, as shown in FIG. **9**, may include an infrared LED emitter **121** connected to an integrated circuit **125**. The infrared LED emitter **121** may be connected with two different resistors **127** so that the infrared LED **121** is capable of emitting at two different strengths, allowing a signal to reach a farther distance, such as the radius **132** where the toy detects the emitter to track to the source **117**, preferably at six feet, while another signal is only capable of reaching a predetermined distance **133** of preferably one and a half feet. The shorter distance would be one where, once the toy **100** reaches this distance, the toy performs a trick **134**. These examples should not be considered limiting, this emitter may be capable of emitting to any distance, such as 20, 15, 10, or less feet. Examples of the different resistance that can provide different distances include lower resistances of 200 Ohms or 390 Ohms as compared to higher resistances of 2,000 Ohms, 3,000 Ohms, or 3,900 Ohms. Further, by connecting different components, listed as different options **128**, the source **117** is capable of having the toy **100** perform different tricks **134**.

[0056] The trick **134** may be caused by an emitted signal operating simultaneously with the original signal, such as through a separate emitter, or in sequence with the original signal from a single emitter. These different signals which cause the toy **100** to move towards the source or cause the toy to perform a trick **134** may be created by the software of the emitter allowing a different wireless signal to be sent at a different frequency or modulation. Further, the different distances reached by the emitted signal may be caused by hardware, such as resistors shown above, or also by a separate emitter with a different emitting distance. Similarly, the different frequency or modulated signal may be caused by a separate emitter emitting a separate frequency or modulated signal which is read at a different distance from the source than the primary frequency or modulated signal.

[0057] In a preferred embodiment, the source may have software capable of driving an infrared LED **121** at two particular frequencies. When the frequency to cause the toy **100** to track to the source **117** is used, the integrated circuit **125** of the source inputs to a different location or can direct a switch **129** to cause the infrared LED **121** to emit at a longer distance through a resistor **127**. When the frequency to cause the toy to perform a trick is used, the integrated circuit **125** of the source inputs to a different location or can direct another switch **129** to cause the infrared LED **121** to emit at a shorter distance through a different resistor **127** (see two resistors at **127**, wherein the higher resistance should relate to a shorter distance, such as the predetermined distance).

[0058] 8. Operation of the Toy

[0059] The toy is a capable of interacting with its environment once the switch is set in "explore mode" **130**, as shown in FIG. **11**. This causes the toy **100** to move forward and backward while turning to move about an area. These movements are predetermined and may be arranged in a variety of ways. These movements should not to be limited to one specific form or description.

[0060] The interaction with the environment could include a preprogrammed chain of events. The length and amount of the preprogrammed steps is not limited to a certain amount or time frame.

[0061] An example of a preferred embodiment could start with the toy being placed in "explore mode", then the toy makes a noise, then moves forward in a straight line and then moves forward while curving to one direction, then moves forward while curving in another direction, and then begins to spin. After spinning, the toy could proceed in a large curve. The toy then could reverse while turning in a direction. All of this may occur while the toy makes periodic noises. This sort of programming could be repeated, or continue with many different preprogrammed steps.

[0062] Further, the toy may have a list of the types of movements it can make, and the ability to randomly choose which movement the toy will make. This may also involve the ability to randomly make noises and sounds.

[0063] Once the toy enters the radius **132** to detect a wireless signal, the toy reacts by moving towards **131** the wireless signal and once it reaches a predetermined distance from the source **117** of the wireless signal, the toy performs a trick **134**. This reaction is caused by the receivers **114** on the toy **100** receiving the wireless signal, transmitting this signal to the control circuitry of the toy, which then transmits a signal to the motors **112** to drive the toy in the direction of the signal. Signals received from the left front receiver **114** would cause the toy **100** to drive the motors **112** towards the left front and the toy would then continuously process and move towards these signals until the toy **100** is a predetermined distance **133** from the source. At this distance, the toy **100** would perform a trick **134**.

[0064] The tricks **134** a toy **100** may perform, as shown in FIGS. **12-15**, include moving from one side to another while sitting on its rear wheels (resembling a dog begging for a treat) **135**, spinning around in a circle (resembling a dog chasing its tail) **136**, charging at the source (such as a dog pouncing on an object) **137**, or moving from side to side (resembling a dog wiggling with excitement) **138**. Particularly, where a toy **100** is made to charge forward or beg, the motor **112** drives the toy **100** in reverse and then drives the motor **100** forward allowing the front of the toy to rise up due to the location of the center of gravity of the toy being on the rear wheels. Further, the toy **100** may make noises throughout its movements or tricks. These tricks should not be considered limiting as the toy could be of any shape or character.

[0065] The distance from the source may be determined by the strength of the wireless signal or from a specific code in the signal that is read at a specific distance from the source.

With regard to the strength of the signal, the toy may be able to process an analog signal and measure the increase in strength due to the analog signal increase. Also, the source may be capable of sending a second signal that is capable of being detected at a range that is closer to the source than the first wireless signal. These examples, of finding the distance between the toy and the source, should not be considered limiting.

[0066] Multiple toys may be used with the same source and the toys will both move towards the wireless signal. Further, the toy may interact with a moveable source, such as a ball, and engage the ball causing it to move, and then continue to push the ball. The toy is also capable of interacting with another device placed around the source, such as wobbly toys **139**.

1. An interactive toy and a source, comprising:

a toy being capable of moving autonomously in its environment through movements controlled by control circuitry of the toy;

a source of a wireless signal which is physically separate from the toy;

two or more sensors of the toy capable of detecting the at least one wireless signal;

a control circuitry of the toy capable of analyzing the wireless signal detected by the sensors and able to direct the toy towards the source of the wireless signal;

wherein the control circuitry of the toy causes the toy to perform a trick once the toy is within a predetermined distance of the source of the wireless signal;

wherein the trick involves a specific set of movements by the toy around or near the source;

wherein there may be multiple different sources of the wireless signal each capable of emitting a different wireless signal;

wherein different wireless signals cause the toy to perform a different trick.

2. The toy of claim **1**, wherein the source of the wireless signal emits an infrared signal and the sensors are capable of detecting infrared signals.

3. The toy of claim **2**, wherein there are at least two motors on the toy capable of moving the toy.

4. The toy of claim **3**, wherein the toy has at least four sensors, with at least two sensors at the front of the toy and at least two sensors at the rear of the toy.

5. The toy of claim **2**, wherein the toy has three wheels, with its center of gravity over two wheels of the toy.

6. The toy of claim **5**, wherein a trick performed by the toy includes moving in reverse, then moving forward allowing the front of the toy to rise up and ride on only two wheels.

7. The toy of claim **2**, wherein the tricks comprise moving from one side to another while sitting on its rear wheels, spinning around in a circle, charging at the source, or moving from side to side.

8. The toy of claim **7**, wherein the toy is capable of physically interacting with the toy and causing the ball to move, with the toy moving correspondingly to continue to interact with the toy.

9. The toy of claim **8**, wherein there may be multiple toys capable of pursuing the source at the same time.

10. The toy of claim **2**, wherein the source comprises a handheld device, a stationary device, or a ball.

11. The toy of claim **10**, wherein the ball consists of four wireless emitters.

12. The toy of claim **1**, wherein the control circuitry of the toy recognizes it is within the predetermined distance from the source of the wireless signal because of a coded signal sent in sequence within the wireless signal from the source of the wireless signal.

13. The toy of claim **1**, wherein the control circuitry of the toy recognizes it is within the predetermined distance from the source of the wireless signal because the toy recognizes a second signal delivered to the toy within the predetermined distance.

14. The toy of claim **1**, wherein the control circuitry of the toy recognizes it is within the predetermined distance from the source of the wireless signal because the control circuitry of the toy analyzes the signal strength of the detected wireless signal.

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