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SECURITY PROTECTION MONITORING APPARATUS FOR SMART HOME

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ABSTRACT

Embodiments of the present invention disclose a security protection monitoring apparatus for smart home, belonging to the technical field of security protection monitoring. The security protection monitoring apparatus includes a camera. A horizontal rotary structure is mounted on an outer wall surface of the camera. A longitudinal rotary structure is mounted on an upper wall surface of the horizontal rotary structure. A control structure is mounted on an inner wall surface of the longitudinal rotary structure. A base structure is mounted on an upper wall surface of the longitudinal rotary structure. The horizontal rotary structure includes a first rotary shaft, a first drive motor, an auxiliary rotary support seat and a protective frame. The first rotary shaft is mounted on an outer wall surface of the camera. The first drive motor is mounted on a front wall surface of the first rotary shaft. The auxiliary rotary support seat is mounted on a rear wall surface of the first rotary shaft. The protective frame is mounted on an outer wall surface of the first drive motor. In embodiments of the present invention, by means of cooperation of the horizontal rotary structure and the longitudinal rotary structure, the camera is driven to rotate horizontally and longitudinally, which may effectively enlarge the monitoring range, reduce the monitoring blind area, lower the use cost, and improve the practicability.

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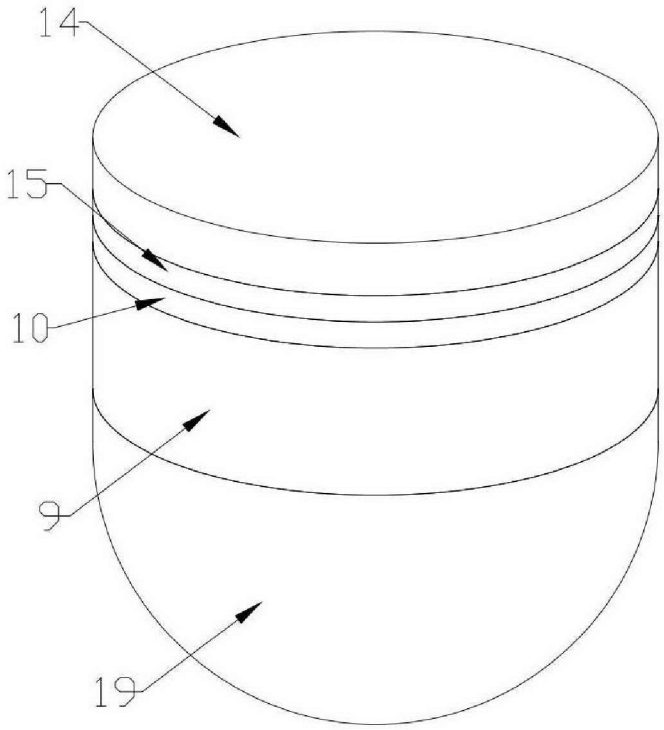


FIG. 1

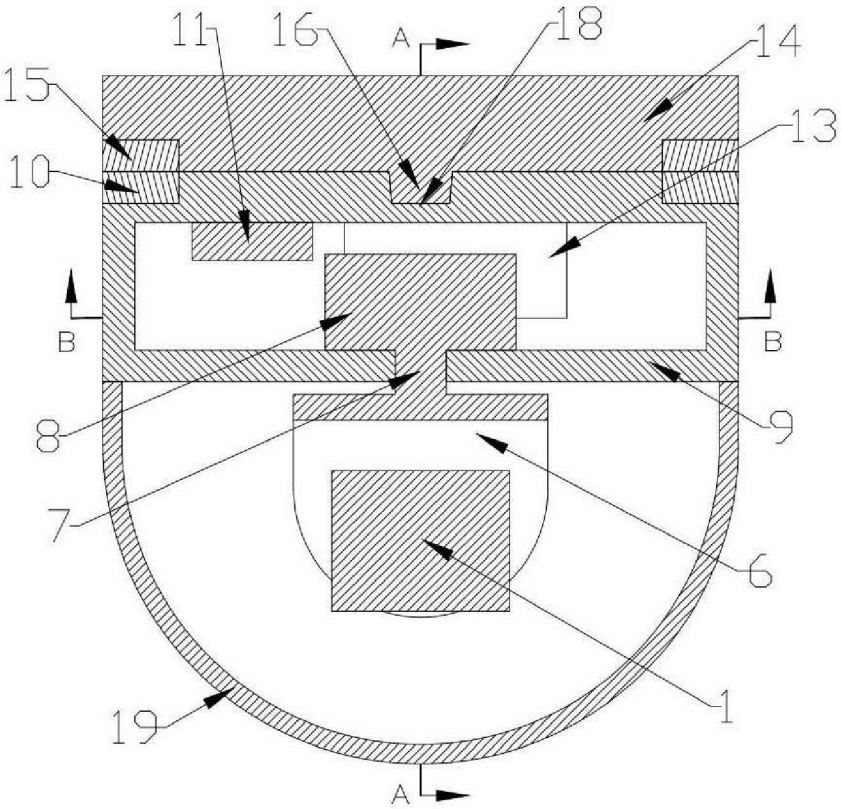


FIG. 2

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SECURITY PROTECTION MONITORING APPARATUS FOR SMART HOME

TECHNICAL FIELD

[0001] The present invention relates to the technical field of security protection monitoring, and particularly to security protection monitoring apparatuses for smart homes.

BACKGROUND

[0002] A security protection monitoring system is to transmit video signals within its closed loop by applying optical fibers, coaxial cables or microwaves, and form an independent and complete system from camera to image displaying and recording. The security protection monitoring system may reflect a monitored object vividly and truthfully in real time, which greatly extends the observation distance of the human eye and expands the function of the human eye. The security protection monitoring system may replace people for long-term surveillance in harsh environments, enabling people to see everything that actually happened to a monitored site and record it by a video recorder. Moreover, an alarm system device alarms the illegal intrusion, and a generated alarm signal is input to an alarm host. The alarm host triggers the monitoring system to make a video and record it. The security protection monitoring system mainly includes four parts, that is, a front-end device, a transmission device, a processing/controlling device and a recording/displaying device.

[0003] However, a monitoring range of the existing security protection monitoring apparatus is less adjustable, which makes a monitoring blind area larger. If it is necessary for reducing the monitoring blind area, there is a need for mounting multiple security protection monitoring apparatuses, which leads to higher use costs and lower practicability. Meanwhile, after the security protection monitoring apparatus is mounted and fixed, if it is necessary for changing its position, the security protection monitoring apparatus needs to be disassembled and re-mounted and fixed, resulting in a cumbersome operation process and poor user experience. The above background of the invention is intended to place the present invention in an appropriate technical context and to allow is significance to be properly appreciated. Any references to prior art should not be construed as admissions that such prior art is widely known or forms part of common general knowledge in the relevant technical field.

SUMMARY

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[0004] An objective of embodiments of the present invention is to provide a security protection monitoring apparatus for smart home to solve or ameliorate the above-mentioned problems in the background art.

[0005] In order to achieve the above objective, the present invention provides the following embodiment.

[0006] A security protection monitoring apparatus for smart home includes a camera. A horizontal rotary structure is mounted on an outer wall surface of the camera. A longitudinal rotary structure is mounted on an upper wall surface of the horizontal rotary structure. A control structure is mounted on an inner wall surface of the longitudinal rotary structure. A base structure is mounted on an upper wall surface of the longitudinal rotary structure. The horizontal rotary structure includes a first rotary shaft, a first drive motor, an auxiliary rotary support seat and a protective frame. The first rotary shaft is mounted on an outer wall surface of the camera. The first drive motor is mounted on a front wall surface of the first rotary shaft. The auxiliary rotary support seat is mounted on a rear wall surface of the first rotary shaft. The protective frame is mounted on an outer wall surface of the first drive motor.

[0007] As a further embodiment of the present invention, the longitudinal rotary structure includes a U-shaped fixed frame, a second rotary shaft and a second drive motor, wherein the U-shaped fixed frame is mounted on a front wall surface of the protective frame, the second rotary shaft is mounted on an upper wall surface of the U-shaped fixed frame, and the second drive motor is mounted on an upper wall surface of the second rotary shaft.

[0008] 。As a further embodiment of the present invention, the control structure includes a housing, a first magnet, a control center, a wireless transceiver and a storage power supply, wherein the housing is mounted on an outer wall surface of the second drive motor, the first magnet is mounted on an upper wall surface of the housing, the control center is mounted on an inner wall surface of the housing, the wireless transceiver is mounted on a right wall surface of the control center, and the storage power supply is mounted on a rear wall surface of the wireless transceiver.

[0009] As a further embodiment of the present invention, the base structure includes a base, a second magnet, an induction charging plug and a charging interface, wherein the base is mounted on an upper wall surface of the housing, the second magnet is mounted on a lower wall surface of the base, the inductive charging plug is mounted on a lower wall surface of the base, and the charging interface is mounted on a rear wall surface of the base.

[0010] As a further embodiment of the present invention, an inductive charging interface is

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mounted on an upper wall surface of the housing.

[0011] As a further embodiment of the present invention, a transparent protective cover is mounted on a lower wall surface of the housing.

[0012] Compared with the prior art, embodiments of the present invention have the following beneficial effects.

[0013] 1. By means of cooperation of the horizontal rotary structure and the longitudinal rotary structure, the camera is driven to rotate horizontally and longitudinally. In this way, embodiments of the present invention solve the following problem that the monitoring range of the existing security protection monitoring apparatus is less adjustable, which makes a monitoring blind area larger. If it is necessary for reducing the monitoring blind area, there is a need for mounting multiple security protection monitoring apparatuses. Embodiments of the present invention may effectively enlarge the monitoring range, reduce the monitoring blind area, lower the use cost, and improve the practicability.

[0014] 2. By means of cooperation of the first magnet and the second magnet as well as the induction charging interface and the induction charging plug, the camera may be separated from the base structure for use, which solves the problem that the existing security protection monitoring apparatus needs to be dismantled for changing its position after being mounted and fixed and then re-mounted and re-fixed, simplify an operation process in a process of changing the position, and improve the user experience.

BRIEF DESCRIPTION OF THE DRAWINGS

[0015] FIG. 1 is a schematic diagram showing a structure of an embodiment of the present invention;

[0016] FIG. 2 is a schematic front cross-sectional view showing a structure in an embodiment of the present invention;

[0017] FIG. 3 is a schematic cross-sectional view showing a structure at A in an embodiment of the present invention; and

[0018] FIG. 4 is a schematic cross-sectional view showing a structure at B in an embodiment of the present invention.

[0019] In the figures: 1. camera; 2. first rotary shaft; 3. first drive motor; 4. auxiliary rotary support seat; 5. protective frame; 6. U-shaped fixed frame; 7. second rotary shaft; 8. second drive motor; 9. housing; 10. first magnet; 11. control center; 12. wireless transceiver; 13. storage power supply; 14. base; 15. second magnet; 16. inductive charging plug; 17. charging interface;

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18. inductive charging interface; and 19. transparent protective cover.

DESCRIPTION OF THE EMBODIMENTS

[0020] The technical solution in embodiments of the present invention will be clearly and completely described with reference to accompanying drawings in the embodiments of the present invention. Obviously, the described embodiments are only a part of the embodiments of the present invention, not all of the embodiments thereof. Based on the embodiments of the present invention, all other embodiments obtained by those ordinarily skilled in the art without any creative efforts fall within the protective scope of the present invention.

[0021] With reference to FIG. 1 to FIG. 4, in an embodiment of the present invention, a security protection monitoring apparatus for smart home includes a camera 1. A horizontal rotary structure is mounted on an outer wall surface of the camera 1. A longitudinal rotary structure is mounted on an upper wall surface of the horizontal rotary structure. A control structure is mounted on an inner wall surface of the longitudinal rotary structure. A base structure is mounted on an upper wall surface of the longitudinal rotary structure. The horizontal rotary structure includes a first rotary shaft 2, a first drive motor 3, an auxiliary rotary support seat 4 and a protective frame 5. The first rotary shaft 2 is mounted on an outer wall surface of the camera 1. The first drive motor 3 is mounted on a front wall surface of the first rotary shaft 2. The auxiliary rotary support seat 4 is mounted on a rear wall surface of the first rotary shaft 2. The protective frame 5 is mounted on an outer wall surface of the first drive motor 3.

[0022] The longitudinal rotary structure includes a U-shaped fixed frame 6, a second rotary shaft 7 and a second drive motor 8, wherein the U-shaped fixed frame 6 is mounted on a front wall surface of the protective frame 5, the second rotary shaft 7 is mounted on an upper wall surface of the U-shaped fixed frame 6, and the second drive motor 8 is mounted on an upper wall surface of the second rotary shaft 7. The control structure includes a housing 9, a first magnet 10, a control center 11, a wireless transceiver 12 and a storage power supply 13, wherein the housing 9 is mounted on an outer wall surface of the second drive motor 8, the first magnet 10 is mounted on an upper wall surface of the housing 9, the control center 11 is mounted on an inner wall surface of the housing 9, the wireless transceiver 12 is mounted on a right wall surface of the control center 11, and the storage power supply 13 is mounted on a rear wall surface of the wireless transceiver 12.The base structure includes a base 14, a second magnet 15, an induction charging plug 16 and a charging interface 17, wherein the base 14 is mounted on an upper wall surface of the housing 9, the second magnet 15 is mounted on a lower wall surface of the base 14, the inductive charging plug 16 is mounted on a lower wall

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surface of the base 14, and the charging interface 17 is mounted on a rear wall surface of the base 14. An inductive charging interface is mounted on an upper wall surface of the housing 9. A transparent protective cover 19 is mounted on a lower wall surface of the housing 9.

[0023] Embodiments of the present invention have the following working principle. The security protection monitoring apparatus for smart home is very simple to operate during use. Firstly, by a worker, the built-in storage power supply 13 in embodiments of the present invention is connected to the control center 11, then the camera 1 is connected to the control center 11 through a wire, the first drive motor 3 is connected to the control center 11 through a wire, the second drive motor 8 is connected to the control center 11 through a wire, the wireless transceiver 12 is connected to the control center 11 through a wire, the inductive charging interface 18 is connected to the control hub 11 through a wire, then the inductive charging plug 16 is connected to the charging interface 17 through a wire, and finally an external alternating-current power supply is connected to the charging interface 17 in embodiments of the present invention. The base 14 is mounted at a designated position, and the housing 9 is placed and fixed on the base 14 by means of the first magnet 10 and the second magnet 15, so as to ensure that the inductive charging plug 16 is completely connected with the inductive charging interface 18. When there is a need for changing a position of the housing 9, the housing is placed on a new placement position after being taken down. When there is a need for adjusting a monitoring position of the camera 1, the first drive motor 3 is controlled by a remote control via the wireless transceiver 12 to drive the first rotary shaft 2 to rotate, which is turn drives the camera 1 to rotate horizontally, or the second rotary shaft 7 is driven by the second drive motor 8 to rotate, which in turn makes the U-shaped fixed frame 6 drive the horizontal rotary structure and the camera 1 to rotate longitudinally. In this way, the use of embodiments of the present invention is completed.

[0024] The foregoing is only a preferred specific embodiment of the present invention, but the protective scope of the present invention is not limited to this. Equivalent substitutions or changes made by those skilled in the art within the technical scope disclosed in the present invention according to the technical solution and the concept of the present invention should be encompassed within the protective scope of the present invention.

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Claims

WHAT IS CLAIMED IS:

1. A security protection monitoring apparatus for smart home, comprising a camera, wherein a horizontal rotary structure is mounted on an outer wall surface of the camera, a longitudinal rotary structure is mounted on an upper wall surface of the horizontal rotary structure, a control structure is mounted on an inner wall surface of the longitudinal rotary structure, and a base structure is mounted on an upper wall surface of the longitudinal rotary structure;

the horizontal rotary structure comprises a first rotary shaft, a first drive motor, an auxiliary rotary support seat and a protective frame,

wherein the first rotary shaft is mounted on an outer wall surface of the camera, the first drive motor is mounted on a front wall surface of the first rotary shaft, the auxiliary rotary support seat is mounted on a rear wall surface of the first rotary shaft, and the protective frame is mounted on an outer wall surface of the first drive motor.

2. The security protection monitoring apparatus for smart home according to claim 1, wherein the longitudinal rotary structure comprises a U-shaped fixed frame, a second rotary shaft and a second drive motor,

wherein the U-shaped fixed frame is mounted on a front wall surface of the protective frame, the second rotary shaft is mounted on an upper wall surface of the U-shaped fixed frame, and the second drive motor is mounted on an upper wall surface of the second rotary shaft.

3. The security protection monitoring apparatus for smart home according to claim 1, wherein the control structure comprises a housing, a first magnet, a control center, a wireless transceiver and a storage power supply,

wherein the housing is mounted on an outer wall surface of the second drive motor, the first magnet is mounted on an upper wall surface of the housing, the control center is mounted on an inner wall surface of the housing, the wireless transceiver is mounted on a right wall surface of the control center, and the storage power supply is mounted on a rear wall surface of the wireless transceiver.

4. The security protection monitoring apparatus for smart home according to claim 1, wherein the base structure comprises a base, a second magnet, an induction charging plug and a charging interface,

wherein the base is mounted on an upper wall surface of the housing, the second magnet is mounted on a lower wall surface of the base, the inductive charging plug is mounted on a lower

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wall surface of the base, and the charging interface is mounted on a rear wall surface of the base.

5. The security protection monitoring apparatus for smart home according to claim 1, wherein an inductive charging interface is mounted on an upper wall surface of the housing.

6. The security protection monitoring apparatus for smart home according to claim 1, wherein a transparent protective cover is mounted on a lower wall surface of the housing.

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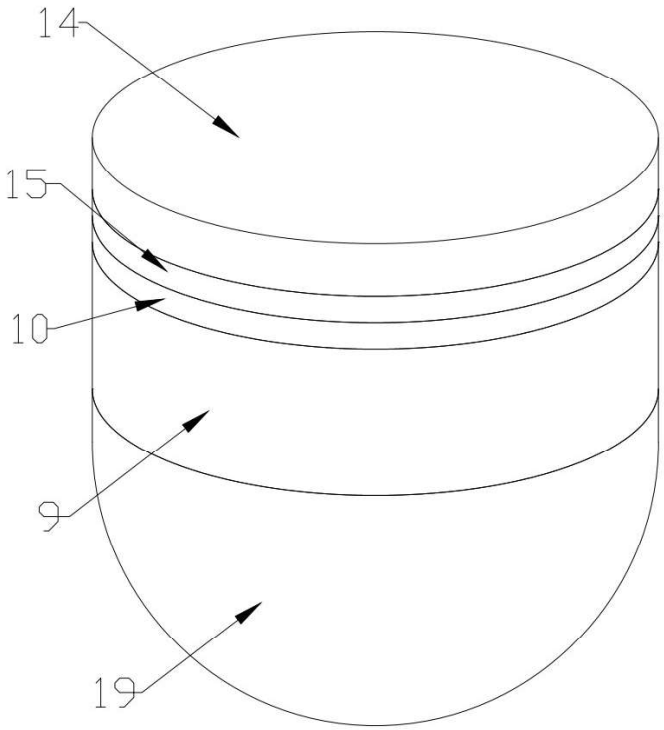


FIG. 1

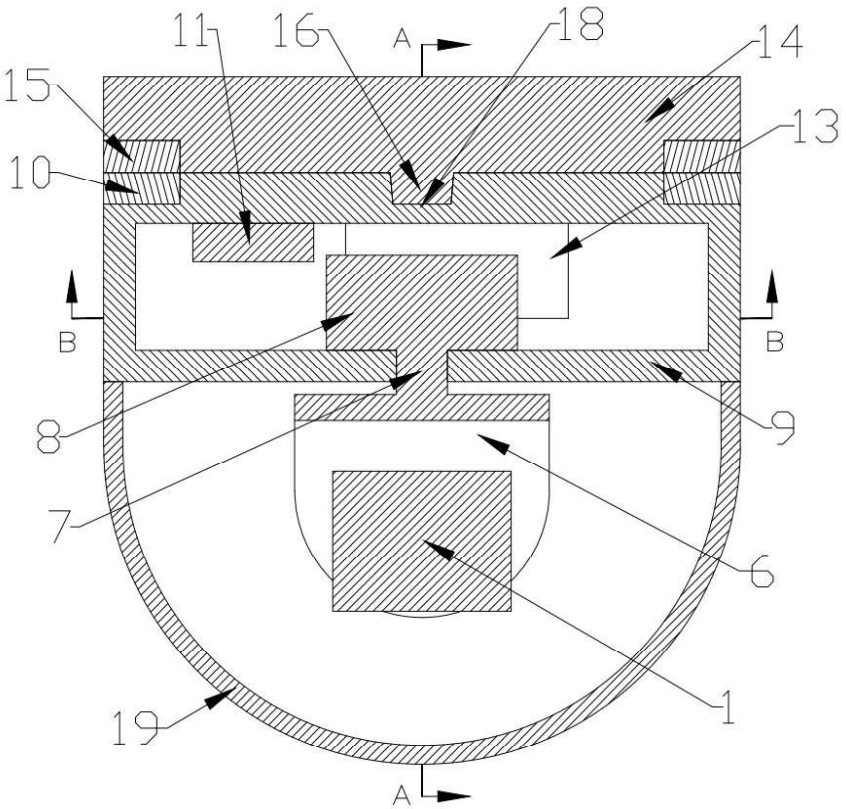


FIG. 2

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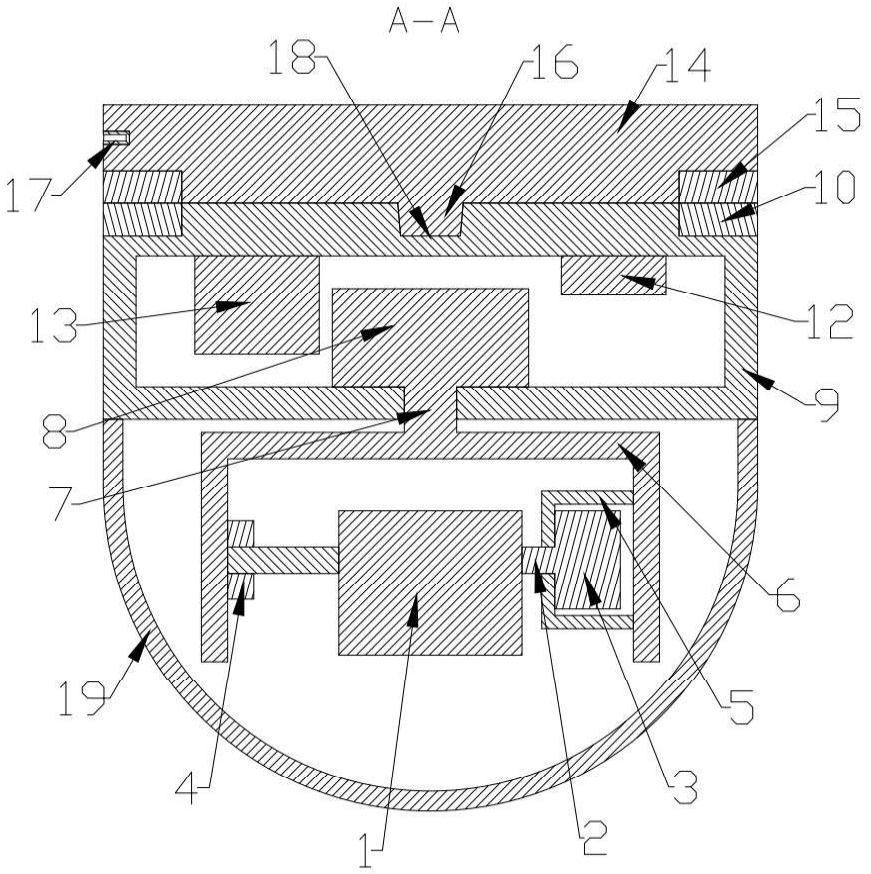


FIG. 3

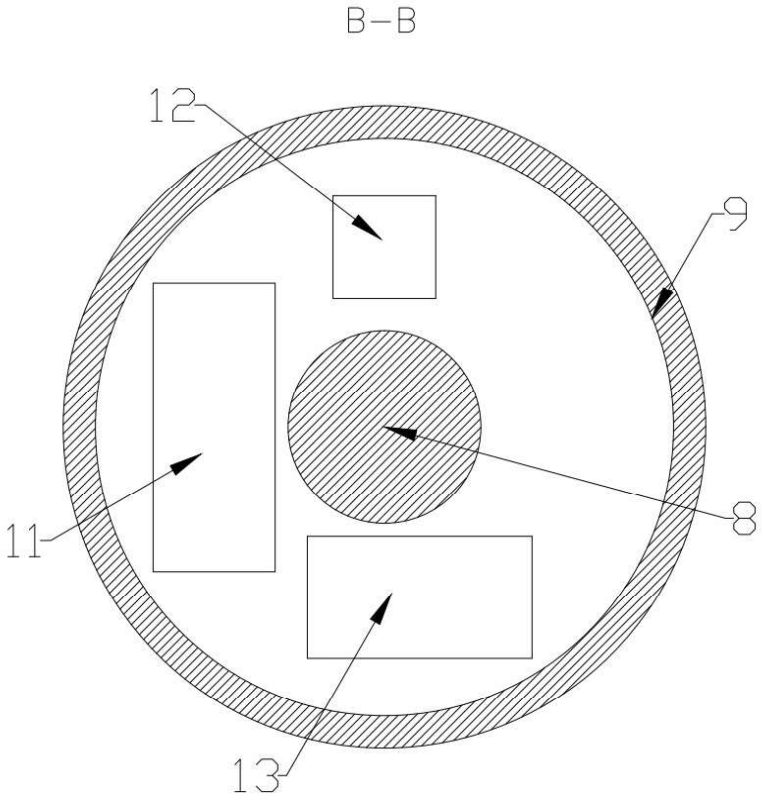


FIG. 4