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(54) **STANDING INTENSIVE CARE UNIT NURSING WORKSTATION**

(57) The present invention discloses a standing intensive care unit (ICU) nursing workstation. The standing ICU nursing workstation includes a main beam, and a monitoring column and a nursing column which are respectively connected to two ends of the main beam on a floor; the nursing column is connected to one end of a horizontal segment of the main beam; the main beam is provided with a sleep lamp, a patient information digital display screen, an auxiliary illuminating lamp and an infusion solution pump support arm; the infusion solution pump support arm is provided with an alarm indicator, a medicine solution pump rack assembly and an examination illuminating lamp; the monitoring column is provided with a treatment monitoring function assembly; the nursing column is provided with a nursing function assembly; the monitoring column and the nursing column are both provided with a medical gas tube security control device and a power supply security control device; a rigid medical gas tube and a strong/weak power supply respectively extend into the main beam, the monitoring column and the nursing column to correspondingly connect a medical gas tube security control device and a medical gas terminal.

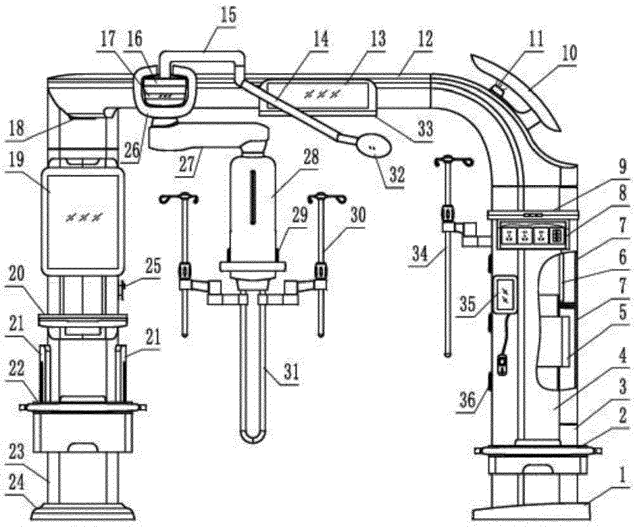


FIG. 1

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## Description

### TECHNICAL FIELD

**[0001]** The present invention belongs to hospital auxiliary treatment equipment, and particularly relates to a standing intensive care unit (ICU) nursing workstation.

### BACKGROUND

**[0002]** ICU is an important discipline of modern hospitals. Suspension bridge/tower of ICU has been widely used in ICU as indispensable auxiliary medical equipment. In the prior art, ICU suspension bridge/tower is constructed as a bridge or tower structure provided with medical gas and power outlets and a simple equipment platform. Since the ICU suspension bridge/tower is suspended from a ceiling or concrete floor slab by a hanging tube, there is no bearing point on the floor. This suspension connection structure has extremely strict requirements on the installation of a suspension connection bracket and the bearing capacity of the ceiling or concrete floor slab. In order to ensure safety, the suspension device needs to be frequently maintained to eliminate the hidden danger of falling. However, since the suspension connection structure is installed in an interlayer of the ceiling or floor slab, it is inconvenient to install and maintain. A medical gas tube is connected to a medical gas terminal by a hose structure. The hose is easy to be aged to cause safety accidents, so that it requires regular maintenance and replacement. However, it is inconvenient to maintain and replace, which will affect the continuity of use and cannot guarantee the need for 24-hour uninterrupted medical monitoring in the ICU. Meanwhile, due to a large volume, a medicine solution rack of the existing ICU suspension bridge/tower is inconvenient to connect and move within a limited bed space in clinical use.

### SUMMARY

**[0003]** An objective of the present invention is to provide a standing intensive care unit (ICU) nursing workstation. The nursing workstation has a main beam horizontally arranged above a headboard of a hospital bed, and a monitoring column and a nursing column extending from two ends of the main beam and fixedly connected to a floor. The support structure is firm. A medical gas tube is connected to a medical gas terminal by a rigid tube structure. The nursing workstation is also provided with a medical gas tube security control device and a power security control device, which provide an alarm instruction for oxygen pressure alarm, power failure alarm and intercom device call prompt. This is convenient for safety control and maintenance. Moreover, a medicine solution pump rack assembly is free to slide and unfold along a side of the hospital bed. At the same time, the clinical function-based configuration of the nursing column is abundant and complete, which improves the convenience of use and safety.

**[0004]** To achieve the above purpose, the present invention provides the following technical solutions.

**[0005]** A standing intensive care unit (ICU) nursing workstation includes a horizontally arranged main beam, and a monitoring column and a nursing column which are respectively connected to two ends of the main beam and extend to be fixed to a floor, where one end of the main beam extends in at least one direction different therefrom to form a horizontally segmented structure, and the nursing column is connected to one end of a horizontal segment of the main beam; the main beam is provided with a sleep lamp (having a reflective device), a patient information digital display screen, an auxiliary illuminating lamp and an infusion solution pump support arm; the infusion solution pump support arm is provided with an alarm indicator, a medicine solution pump rack assembly and an examination illuminating lamp; the monitoring column is provided with a treatment monitoring function assembly; the nursing column is provided with a nursing function assembly; the monitoring column and the nursing column are respectively provided with a medical gas tube security control device and a power supply security control device; a rigid medical gas tube extends to the main beam, the monitoring column and the nursing column to correspondingly connect a medical gas tube security control device and a medical gas terminal; a strong/weak power supply extends to the main beam, the monitoring column and the nursing column to correspondingly connect a power supply security control device and a strong/weak power socket interface; a planar layout formed by the monitoring column, the nursing column, the infusion solution pump support arm and the main beam can change a position, a direction, a distance and an angle thereof according to a clinical need.

**[0006]** In the technical solution of the present invention, the nursing column adopts a column structure; the nursing function assembly includes a stethoscope hanger, a flashlight hanger, a negative pressure straw box, a hidden strong/weak power control box I, a working platform, a medical image-text digital information device and a keyboard support plate; the medical image-text digital information device is externally attached to the nursing column; a keyboard placement area and a mouse placement area are respectively arranged above the keyboard support plate; a keyboard movable cover and a mouse movable cover connected to a keyboard base support in an inverted manner are arranged above the keyboard placement area and the mouse placement area.

**[0007]** In the technical solution of the present invention, the nursing column adopts a storage box device; the nursing function assembly includes the medical image-text digital information device, the working platform, the flashlight hanger, the negative pressure straw box, the hidden strong/weak power control box I, the stethoscope hanger and the keyboard drawer; the medical image-text digital information device is embedded in a movable cabinet door of the storage box device.

**[0008]** In the technical solution of the present invention, the treatment monitoring function assembly of the monitoring column includes a ventilator lifting platform, an embedded storage cavity (having a movable door), a cold/hot freezer, a medical instrument platform, a hidden power socket box I under the medical instrument platform, a medicinal pump rack rod assembly, a call intercom, a medical gas terminal and a hidden strong/weak power control box II; the call intercom is connected to the alarm indicator; the alarm indicator prompts an alarm when the call intercom is calling; the hidden power socket box I is provided therein with a power socket and a take-up device.

**[0009]** In the technical solution of the present invention, the treatment monitoring function assembly of the monitoring column includes a ventilator lifting platform, an embedded storage cavity (having a movable door), a cold/hot freezer, a medicine solution pump rack rod assembly, a call intercom, a medical gas terminal, a hidden strong/weak power control box II, a monitoring module input/output interface and an embedded monitoring information display screen; the call intercom is connected to the alarm indicator; the alarm indicator gives a prompt when the call intercom is calling; the embedded monitoring information display screen is embedded in the monitoring column and cooperates with the monitoring module input/output interface to display monitoring information.

**[0010]** In the technical solution of the present invention, the medicine solution pump rack assembly is a medicine solution pump rack box; the medicine solution pump rack box includes a suction terminal, a U-shaped infusion pump hanging rod, and a medicine solution hook shaft rod assembly, a take-up device, a power socket and a weak power interface.

**[0011]** In the technical solution of the present invention, the infusion solution pump support arm is a combined structure of a fixed cantilever and a rotating arm; one end of the fixed cantilever is fixedly connected to the main beam, and one end of the rotating arm is slidably connected to a slide rail on the fixed cantilever through a U-shaped infusion solution pump sliding assembly; the medicine solution pump rack assembly is movably lifted to the other end of the rotating arm, so that the medicine solution pump rack assembly slides along a side of a hospital bed to expand and rotate; the alarm indicator is arranged at a front end position of the fixed cantilever; the examination illuminating lamp is arranged on the fixed cantilever through a rotary support rod and a fixed arm in cooperation.

**[0012]** In the technical solution of the present invention, the infusion solution pump support arm is constructed as a fixed cantilever; one end of the fixed cantilever is fixedly connected to the main beam; the medicine solution pump rack assembly is slidably connected to a slide rail on the fixed cantilever through a U-shaped infusion solution pump sliding assembly, so that the medicine solution pump rack assembly slides along a side of a hospital bed to expand and rotate; the alarm indicator is arranged at a front end position of the fixed cantilever; the examination illuminating lamp is arranged on the fixed cantilever through a rotary support rod and a fixed arm in cooperation.

**[0013]** In the technical solution of the present invention, the infusion solution pump support arm is a combined structure of two rotating arms; the two rotating arms are connected up and down from end to end; one end of one rotating arm is connected to the main beam, and one end of the other rotating arm movably lifts the medicine solution pump rack assembly, so that the medicine solution pump rack assembly is expanded, rotated and moved along a side of the hospital bed.

**[0014]** In the technical solution of the present invention, the medical gas tube security control device includes a tube valve and an oxygen pressure monitoring device connected to a medical gas tube; the oxygen pressure monitoring device is connected to the alarm indicator; the alarm indicator prompts an alarm when the oxygen pressure monitoring device detects a leak or unstable pressure in the medical gas tube.

**[0015]** In the technical solution of the present invention, the hidden strong/weak power control box II and the hidden strong/weak power control box I respectively include a strong power socket, a weak power interface, a ground terminal, a circuit breaker and a leakage switch.

**[0016]** In the technical solution of the present invention, the medical image-text digital information device is constructed as a medical-grade image display.

**[0017]** In the technical solution of the present invention, the medical image-text digital information device is a medical-grade imaging-dedicated all-in-one computer.

**[0018]** In the technical solution of the present invention, the medical image-text digital information device is an all-in-one touch screen computer.

**[0019]** In the technical solution of the present invention, the medical image-text digital information device is a tablet computer.

**[0020]** In the technical solution of the present invention, the ventilator lifting platform and the working platform each include a platform plate with a drawer, and a hidden power socket box II on both sides of the drawer below the platform plate; the hidden power socket box II is provided therein with a power socket and a take-up device.

**[0021]** In the technical solution of the present invention, the ventilator lifting platform is connected to the monitoring column through a lifting assembly; the lifting assembly includes a connecting rod, a guide rail device and an electric push rod.

**[0022]** In the technical solution of the present invention, the nursing column is constructed as a medical supply storage cabinet assembly; the nursing function assembly includes a stethoscope hanger, a cold/hot freezer, a flashlight hanger, a negative pressure straw box, a hidden strong/weak power control box I and a working platform.

**[0023]** In the technical solution of the present invention,

the medical supply storage cabinet assembly on the nursing column is a cavity with an active door.

**[0024]** In the technical solution of the present invention, the medical supply storage cabinet assembly is constructed as an open structure.

**[0025]** In the technical solution of the present invention, the medical supply storage cabinet assembly is independently constructed and externally connected to an external cabinet/box/frame of the nursing column.

**[0026]** In the technical solution of the present invention, the rigid medical gas tube extends from a floor into the main beam, the monitoring column and the nursing column to correspondingly connect a medical gas tube security control device and a medical gas terminal; the strong/weak power supply extends from a floor into the main beam, the monitoring column and the nursing column to correspondingly connect a power security control device and a strong/weak power socket interface.

**[0027]** In the technical solution of the present invention, the rigid medical gas tube extends from a ceiling into the main beam, the monitoring column and the nursing column to correspondingly connect a medical gas tube security control device and a medical gas terminal; the strong/weak power supply extends from a ceiling into the main beam, the monitoring column and the nursing column to correspondingly connect a power security control device and a strong/weak power socket interface.

**[0028]** In the technical solution of the present invention, the rigid medical gas tube laterally extends from a wall into the main beam, the monitoring column and the nursing column to correspondingly connect a medical gas tube security control device and a medical gas terminal; the strong/weak power supply laterally extends from a wall into the main beam, the monitoring column and the nursing column to correspondingly connect a power security control device and a strong/weak power socket interface.

**[0029]** In the technical solution of the present invention, one end of the main beam extends rearward to form a horizontally segmented structure, and the nursing column is connected to one end of a rearward horizontal segment of the main beam.

**[0030]** In the technical solution of the present invention, one end of the main beam extends forward to form a horizontally segmented structure, and the nursing column is connected to one end of a forward horizontal segment of the main beam.

**[0031]** As an improvement of the technical solution of the present invention, a standing ICU nursing workstation includes a horizontally arranged main beam, and a monitoring column and a nursing column which are respectively connected to two ends of the main beam and extend to be fixed to a floor, where the main beam is provided with a sleep lamp (having a reflective device), a patient information digital display screen and an auxiliary illuminating lamp; one end of the main beam extends forward to form a horizontally segmented structure, and the nursing column is connected to one end of a forward horizontal segment of the main beam; the forward horizontal segment of the main beam is respectively provided with an alarm indicator, a light strip, a medicine solution pump rack assembly and an examination illuminating lamp; the monitoring column is provided with a treatment monitoring function assembly; the nursing column is provided with a nursing function assembly; the monitoring column and the nursing column are provided with a medical gas tube security control device and a power supply security control device; a rigid medical gas tube extends into the main beam, the monitoring column and the nursing column to correspondingly connect a medical gas tube security control device and a medical gas terminal; a strong/weak power supply extends into the main beam, the monitoring column and the nursing column to correspondingly connect a power security control device and a strong/weak power socket interface; the medicine solution pump rack assembly is slidably connected to a slide rail on the forward horizontal segment of the main beam; a planar layout formed by the monitoring column, the nursing column and the main beam can change a position, a direction, a distance and an angle thereof according to a clinical need.

**[0032]** As an improvement of the technical solution of the present invention, a standing ICU nursing workstation includes a horizontally arranged main beam, and a monitoring column and a nursing column which are respectively connected to two ends of the main beam in parallel and extend to be fixed to a floor, where the main beam is provided with a sleep lamp (having a reflective device), a patient information digital display screen, an auxiliary illuminating lamp, an alarm indicator, a medicine solution pump rack assembly and an examination illuminating lamp; the monitoring column is provided with a treatment monitoring function assembly; the nursing column is provided with a nursing function assembly; the monitoring column and the nursing column are provided with a medical gas tube security control device and a power supply security control device; a rigid medical gas tube extends into the main beam, the monitoring column and the nursing column to correspondingly connect a medical gas tube security control device and a medical gas terminal; a strong/weak power supply extends into the main beam, the monitoring column and the nursing column to correspondingly connect a power supply security control device and a strong/weak power socket interface; a planar layout formed by the monitoring column, the nursing column, the infusion solution pump support arm and the main beam can change a position, a direction, a distance and an angle thereof according to a clinical need.

**[0033]** In the technical solution of the present invention, the medical gas tube is made of a rigid metal material.

**[0034]** In the technical solution of the present invention, the medical gas tube is made of a rigid non-metallic material.

**[0035]** In the technical solution of the present invention, the nursing workstation is suspended by using a hanging tube and fixed to the floor.

**[0036]** In the technical solution of the present invention, the nursing workstation provides a medical equipment bearing device, a strong/weak power socket interface, a medical gas interface, a basic information display, and a device for acquiring, browsing, recording, transmitting and storing medical image and medical care digital information.

**[0037]** In the technical solution of the present invention, the nursing workstation further includes a patient lifting and moving device connected to the main beam; the patient lifting and moving device adopts a lifting and moving arm; the lifting and moving arm is connected to the main beam through a fixed seat; the lifting and moving arm is movably connected to the fixed seat through a shaft; the lifting and moving arm is provided with a sling driven by a lifting motor and provided with a hook.

**[0038]** In the technical solution of the present invention, the patient lifting and moving device adopts a lifting arm; the lifting arm is connected to the main beam through a fixed seat; the lifting arm is movably connected to the fixed seat through a shaft and is driven by a driving device; the lifting arm is fixedly provided with a sling with a hook.

**[0039]** In the technical solution of the present invention, the lifting arm is connected to the main beam through a shaft seat; one end of the lifting arm is connected to the driving device; the lifting arm is fixedly provided with a sling with a hook.

**[0040]** The present invention has the following beneficial effects:

1. In the technical solution of the present invention, the nursing workstation adopts a monitoring column and a nursing column fixedly connected to a floor next to an ICU bed and upward extending to the main beam above the hospital bed. The standing structure design is convenient to install and maintain, eliminating the need to frequently maintain the suspension connection bracket in the prior art. In addition, the installation of the standing structure has no special requirement on the bearing capacity of a ceiling. This fundamentally solves the problems of inconvenient installation and maintenance and hidden safety hazards existing in the conventional ICU suspension bridge/tower structure in the prior art.

2. In the technical solution of the present invention, the existing non-metallic flexible medical gas tube is improved to a metal or non-metallic rigid structure. The metal or non-metallic rigid structure extends laterally from a floor, a ceiling or a wall into an inner cavity of the monitoring column, the nursing column and the main beam to correspondingly connect a medical gas safety control device and medical gas terminal. A strong/weak power supply extends laterally from a floor, a ceiling or a wall into the inner cavity of the monitoring column, the nursing column and the main beam to connect a corresponding strong/weak power socket interface. In the prior art, the non-metallic flexible tube has a short service life. In the present invention, the metal or non-metallic rigid tube structure is safe, reliable and durable. Therefore, the present invention effectively ensures the safety and stability of medical gas use and basically prevents explosion caused by the damage of the flexible medical gas tube. At the same time, the design of the medical gas tube security control device and the power supply security control device provides convenient and fast security control and guarantee for the normal use and maintenance of medical gas equipment, etc.

3. In the technical solution of the present invention, an alarm indicator is arranged at a front end of an infusion solution pump support arm. An oxygen pressure monitoring device is connected to a rigid medical gas tube. The alarm indicator is respectively connected to the oxygen pressure monitoring device, a strong/weak power cable and a call intercom. When the medical gas tube leaks or the pressure is unstable, a strong/weak power cable fails, or a patient starts the call intercom, the alarm indicator sends out light and sound prompts, respectively. In this way, medical personnel can receive the prompts in time from a conspicuous position of the nursing workstation, avoiding a medical safety accident and ensuring the safety of the use of the equipment.

4. In the technical solution of the present invention, the medicine solution pump rack assembly is slidably connected to a fixed cantilever through a rotating arm and an infusion solution pump sliding assembly. The infusion solution pump sliding assembly is a U-shaped structure. An examination illuminating lamp is arranged above a front end of the fixed cantilever by a fixed arm. The fixed cantilever extends from a front end of the main beam along a side of the hospital bed. In this way, the medicine solution pump rack assembly and the examination illuminating lamp can slide along the fixed rotating arm from a headboard to a footboard of a bed and cooperate with a rotation joint to rotate. The range of the movement is large and the position of the movement is reasonable, which is convenient for medical personnel to operate and meets the need of treatment by medical personnel.

5. In the technical solution of the present invention, the nursing column is provided with a medical image-text digital information device. Through this device, medical personnel can view, record, store and transmit digital image and text information of a patient nearby. The nursing column may also be equipped with a medical supply storage cabinet assembly. The medical supply storage cabinet assembly may be a cavity structure with an active door, an open struc-

ture, or an external cabinet/box/frame structure independently constructed and externally connected to the nursing column. In this way, the nursing column has more storage space, which is convenient for medical personnel to use during the treatment of a patient.

6. In the technical solution of the present invention, a reflective device is further arranged above a sleep lamp. The reflective device enables light from the sleep lamp to be focused above the headboard, thereby providing a better light illumination effect for both patient and medical personnel.

7. In the technical solution of the present invention, a patient lifting and moving device may be arranged on the main beam, which can move a patient from the ICU bed to a transfer bed smoothly, safely and conveniently without manual work. This device reduces the workload of medical personnel and avoids secondary injury to the patient caused by manual handling.

8. In the technical solution of the present invention, the monitoring column is provided with a treatment monitoring function assembly, and the nursing column is provided with a nursing function assembly. The complete and reasonable arrangement of the monitoring and nursing assemblies is convenient for medical personnel to operate nearby and realize high-quality medical monitoring of a patient.

## BRIEF DESCRIPTION OF THE DRAWINGS

**[0041]**

FIG. 1 is a front view structure of a preferred implementation of the present invention.

FIG. 2 is a top view structure of the present invention.

FIG. 3 is a diagram showing a structure along A-direction in FIG. 2.

FIG. 4 is a partial section view of a monitoring column unit of the present invention.

FIG. 5 is a lateral partial section view of a monitoring column unit of the present invention.

FIG. 6 is a schematic connection diagram of a rotating arm, an infusion solution pump sliding assembly, a medicine solution pump rack assembly and a fixed cantilever according to the present invention.

FIG. 7 is a rear lateral partial section view of a medicine solution pump rack assembly unit of the present invention.

FIG. 8 is a lateral partial section view of a nursing column unit of the present invention.

FIG. 9 is a lateral view structure of a keyboard support plate unit in the present invention.

FIG. 10 is a top view structure of a keyboard support plate unit in the present invention.

FIG. 11 is a lateral view structure of a keyboard movable cover and a mouse movable cover of a keyboard support plate unit in an opened state according to the present invention.

FIG. 12 is a top view structure of a keyboard movable cover and a mouse movable cover of a keyboard support plate unit in an opened state according to the present invention.

FIG. 13 is a schematic diagram of an implementation in which a monitoring column is provided with an embedded monitoring information display screen and a monitoring module input/output interface according to the present invention.

FIG. 14 is a schematic diagram of an implementation in which a nursing column adopts a storage box according to the present invention.

FIG. 15 is a structural diagram of a movable cabinet door in a closed state taken along line B-B in FIG. 14.

FIG. 16 is a structural diagram of a movable cabinet door in an opened state taken along line B-B in FIG. 14.

FIG. 17 is a lateral connection diagram of a rotating arm, an infusion solution pump sliding assembly, a medicine solution pump rack assembly and a fixed cantilever according to the present invention.

FIG. 18 is a connection diagram of an implementation of an infusion solution pump sliding assembly, a medicine solution pump rack assembly and a fixed cantilever according to the present invention.

FIG. 19 is a schematic diagram of an implementation in which a medicine solution pump rack assembly is connected to a main beam by double cantilevers according to the present invention.

FIG. 20 is a partial section view of an implementation of a nursing column equipped with a medical supply storage cabinet assembly according to the present invention.

FIG. 21 is a lateral partial section view of an implementation of a nursing column equipped with a med-

ical supply storage cabinet assembly according to the present invention.

FIG. 22 is a structural diagram of an active door in a closed state taken along line C-C in FIG. 20.

FIG. 23 is a structural diagram of an active door in an opened state taken along line C-C in FIG. 20.

FIG. 24 is a schematic diagram of an implementation of a nursing column equipped with an external cabinet/box/frame structure according to the present invention.

FIG. 25 is a lateral view of an implementation of a nursing column equipped with an external cabinet/box/frame structure according to the present invention.

FIG. 26 is a top view of an implementation of the present invention in combination with a hospital bed.

FIG. 27 is a top view of an implementation in which a horizontal segment of a main beam of the present invention extends forward to combine with a hospital bed.

FIG. 28 is a lateral view of an implementation in which a horizontal segment of a main beam of the present invention extends forward to combine with a hospital bed.

FIG. 29 is a top view of another implementation in which a horizontal segment of a main beam of the present invention extends forward to combine with a hospital bed.

FIG. 30 is a top view of an implementation in which two ends of a main beam of the present invention combine with a hospital bed in parallel.

FIG. 31 is a front view of an implementation in which two ends of a main beam of the present invention combine with a hospital bed in parallel.

FIG. 32 is a schematic diagram of an implementation in which one end of a nursing workstation is suspended to a ceiling by using a hanging tube while the other end is fixedly connected to a floor according to the present invention.

FIG. 33 is a schematic diagram of an implementation in which two ends of a nursing workstation are suspended to a ceiling by using a hanging tube according to the present invention.

FIG. 34 is a schematic diagram of an implementation of a patient lifting and moving device according to the present invention.

FIG. 35 is a top view of an implementation of a patient lifting and moving device according to the present invention.

FIG. 36 is a first schematic structural diagram of a patient lifting and moving device unit according to the present invention.

FIG. 37 is a second schematic structural diagram of a patient lifting and moving device unit according to the present invention.

FIG. 38 is a third schematic structural diagram of a patient lifting and moving device unit according to the present invention.

**[0042]** Reference numerals: 1. monitoring column shield, 2. ventilator lifting platform, 3. access door, 4. monitoring column, 5. cold/hot freezer, 6. embedded storage cavity, 7. movable door, 8. hidden power socket box I, 9. medical instrument platform, 10. reflective device, 11. sleep lamp, 12. main beam, 13. patient information digital display, 14. rotary support rod, 15. fixed arm 16. fixed cantilever, 17. alarm indicator, 18. illuminating lamp, 19. medical image-text digital information device, 20. keyboard tray, 21. hidden strong/weak power box I, 22. working platform, 23. nursing column, 24. nursing column shield, 25. stethoscope hanger, 26. infusion solution pump sliding assembly, 27. rotating arm, 28. medicine solution pump rack assembly, 29. suction terminal, 30. medicine solution hook shaft rod assembly, 31. U-shaped infusion pump hanging rod, 32. examination illuminating lamp, 33. auxiliary illuminating lamp, 34. medicine solution pump rack rod assembly, 35. call intercom, 36. medical gas terminal, 37. hidden strong/weak power box II, 38. guide rail, 39. service valve, 40. medical gas tube, 41. oxygen pressure monitoring device, 42. hidden power socket box II, 43. drawer, 44. connecting rod, 45. guide rail device, 46. electric push rod, 47. drag chain, 48. cantilever beam, 49. circuit breaker, 50. strong/weak power supply, 51. embedded monitoring information display screen, 52. monitoring module input/output interface, 53. storage box, 54. keyboard drawer, 55. storage cabinet, 56. layered partition, 57. active door, 58external cabinet/box/frame, 59. hospital bed, 60. light strip, 61. hanging tube, 62. patient lifting and moving device, 63. floor, 201. keyboard movable cover, 202. keyboard base support, 203. keyboard support bracket, 204. mouse movable cover, 205. mouse placement area, 206. keyboard placement area, 5301. movable cabinet door, 5302. embedded storage box, 5303. cabinet housing, 5304. storage box cavity, 6201. fixed seat, 6202. shaft, 6203. lifting and moving arm, 6204. lifting motor, 6205. sling, 6206. hook, 6207. lifting arm, 6208. driving device, and 6209. shaft seat.

## DETAILED DESCRIPTION

**[0043]** The present invention is described in further detail below with reference to the preferred embodiments and accompanying drawings. To provide a thorough understanding of the present invention, numerous specific details are shown in the description below. However, it is apparent to those skilled in the art that the present invention may be implemented without using some or all of these specific details, and in other embodiments, known operations are not described in detail without making the present invention difficult to understand.

**[0044]** As shown in FIG. 1, FIG. 2, FIG. 3, FIG. 4, FIG. 5, FIG. 6, FIG. 7, FIG. 8, FIG. 9, FIG. 10, FIG. 11, FIG. 12, FIG. 13, FIG. 14, FIG. 15, FIG. 16, FIG. 17, FIG. 18, FIG. 19, FIG. 20, FIG. 21, FIG. 22, FIG. 23, FIG. 24, FIG. 25, FIG. 26, FIG. 27, FIG. 28, FIG. 29, FIG. 30, FIG. 31, FIG. 32, FIG. 33, FIG. 34, FIG. 35, FIG. 36, FIG. 37 and FIG. 38, a standing intensive care unit (ICU) nursing workstation includes the following components assembled by a fastener and a connecting member: a monitoring column shield 1, a ventilator lifting platform 2, an access door 3, a monitoring column 4, a cold/hot freezer 5, an embedded storage cavity 6, a movable door 7, a hidden power socket box I 8, a medical instrument platform 9, a reflective device 10, a sleep lamp 11, a main beam 12, a patient information digital display 13, a rotary support rod 14, a fixed arm 15, a fixed cantilever 16, an alarm indicator 17, an illuminating lamp 18, a medical image-text digital information device 19, a keyboard tray 20, a hidden strong/weak power box I 21, a working platform 22, a nursing column 23, a nursing column shield 24, a stethoscope hanger 25, an infusion solution pump sliding assembly 26, a rotating arm 27, a medicine solution pump rack assembly, 28, a suction terminal 29, a medicine solution hook shaft rod assembly 30, a U-shaped infusion pump hanging rod 31, an examination illuminating lamp 32, an auxiliary illuminating lamp 33, a medicine solution pump rack rod assembly 34, a call intercom 35, a medical gas terminal 36, a hidden strong/weak power box II 37, a guide rail 38, a service valve 39, a medical gas tube 40, an oxygen pressure monitoring device 41, a hidden power socket box II 42, a drawer 43, a connecting rod 44, a guide rail device 45, an electric push rod 46, a drag chain 47, a cantilever beam 48, a circuit breaker 49, a strong/weak power supply 50, an embedded monitoring information display screen 51, a monitoring module input/output interface 52, a storage box device 53, a keyboard drawer 54, a storage cabinet 55, a layered partition 56, an active door 57, an external cabinet/box/frame 58, a hospital bed 59, a light strip 60, a hanging tube 61, a patient lifting and moving device 62, a floor 63, a keyboard movable cover 201, a keyboard base support 202, a keyboard support bracket 203, a mouse movable cover 204, a mouse placement area 205, a keyboard placement area 206, a movable cabinet door 5301, an embedded storage box 5302, a cabinet housing 5303, a storage box cavity 5304, a fixed seat 6201, a shaft 6202, a lifting and moving arm 6203, a lifting motor 6204, a sling 6205, a hook 6206, a lifting arm 6207, a driving device 6208, and a shaft seat 6209.

Specific Embodiment

Preferred Implementation

**[0045]** A standing ICU nursing workstation includes a horizontally arranged main beam 12, and a monitoring column 4 and a nursing column 23 which are respectively connected to two ends of the main beam 12 and extend to be fixed to a floor. One end of the main beam 12 extends in at least one direction different therefrom to form a horizontally segmented structure, and the nursing column is connected to one end of a horizontal segment of the main beam 12. The main beam is provided with a sleep lamp 11 (having a reflective device 10), a patient information digital display screen 13, an auxiliary illuminating lamp 33 and an infusion solution pump support arm. The infusion solution pump support arm is provided with an alarm indicator 17, a medicine solution pump rack assembly 28 and an examination illuminating lamp 32. The monitoring column 4 is provided with a treatment monitoring function assembly, and the nursing column 23 is provided with a nursing function assembly. The monitoring column 4 and the nursing column 23 are respectively provided with a medical gas tube security control device and a power supply security control device. A rigid medical gas tube 40 extends to the main beam, the monitoring column and the nursing column to correspondingly connect a medical gas tube security control device and a medical gas terminal. A strong/weak power supply extends to the main beam, the monitoring column and the nursing column to correspondingly connect a power supply security control device and a strong/weak power socket interface. A planar layout formed by the monitoring column 4, the nursing column 23, the infusion solution pump support arm and the main beam 12 can change a position, a direction, a distance and an angle thereof according to a clinical need.

**[0046]** In a preferred implementation, the nursing column 23 adopts a column structure. The nursing function assembly includes a stethoscope hanger 25, a flashlight hanger, a negative pressure straw box, a hidden strong/weak power control box I 21, a working platform 22, a medical image-text digital information device 19 and a keyboard support plate 20. The medical image-text digital information device 19 is externally attached to the nursing column 23. A keyboard placement area 206 and a mouse placement area 205 are respectively arranged above the keyboard support plate 20. A keyboard movable cover 201 and a mouse movable cover 204 connected to a keyboard base support 202 in an inverted manner are arranged above the keyboard placement area and the mouse placement area.

**[0047]** As shown in FIG. 14, FIG. 15 and FIG. 16, the nursing column 23 adopts a storage box device 53. The

nursing function assembly includes a medical image-text digital information device 19, a working platform 22, a flashlight hanger, a negative pressure straw box, a hidden strong/weak power control box 121, a stethoscope hanger 25 and a keyboard drawer 54. The storage box device 53 is formed by a cabinet housing 5303 and an embedded storage box 5302. The storage box is provided with a storage box cavity 5304 and a movable cabinet door 5301, and is embedded in the nursing column 23. The medical image-text digital information device 19 of the storage box device 53 is embedded in the movable cabinet door 5301 of the storage box device 53.

**[0048]** In a preferred implementation, the treatment monitoring function assembly of the monitoring column 4 includes a ventilator lifting platform 2, an embedded storage cavity 6 (having a movable door 7), a cold/hot freezer 5, a medical instrument platform 9, a hidden power socket box I 8 under the medical instrument platform, a medicinal pump rack rod assembly 34, a call intercom 35, a medical gas terminal 36 and a hidden strong/weak power control box II 37. The call intercom 35 is connected to the alarm indicator 17. The alarm indicator 17 prompts an alarm when the call intercom 35 is calling. The hidden power socket box I 8 is provided therein with a power socket and a take-up device.

**[0049]** As shown in FIG. 13, this implementation differs from the preferred implementation in that: the treatment monitoring function assembly of the monitoring column 4 includes a ventilator lifting platform 2, an embedded storage cavity 6 (having a movable door 7), a cold/hot freezer 5, a medicine solution pump rack rod assembly 34, a call intercom 35, a medical gas terminal 36, a hidden strong/weak power control box II 37, a monitoring module input/output interface 52 and an embedded monitoring information display screen 51. The call intercom 35 is connected to the alarm indicator 17. The alarm indicator 17 gives a prompt when the call intercom 35 is calling. The embedded monitoring information display screen 51 is embedded in the monitoring column 4 and cooperates with the monitoring module input/output interface 52 to display monitoring information.

**[0050]** In a preferred implementation of the present invention, the medicine solution pump rack assembly 28 is a medicine solution pump rack box. The medicine solution pump rack box includes a suction terminal 29, a U-shaped infusion pump hanging rod 31, a medicine solution hook shaft rod assembly 30, a take-up device, a power socket and a weak power interface.

**[0051]** In a preferred implementation of the present invention, the infusion solution pump support arm is a combined structure of a fixed cantilever 16 and a rotating arm 27. One end of the fixed cantilever is fixedly connected to the main beam 12, and one end of the rotating arm is slidably connected to a slide rail 38 on the fixed cantilever through a U-shaped infusion solution pump sliding assembly 26. The medicine solution pump rack assembly 28 is movably lifted to the other end of the rotating arm, so that the medicine solution pump rack assembly 28 slides along a side of a hospital bed to expand rotate. The alarm indicator 17 is arranged at a front end position of the fixed cantilever. The examination illuminating lamp 32 is arranged on the fixed cantilever through a rotary support rod 14 and a fixed arm 15 in cooperation.

**[0052]** As an improved structure of the infusion solution pump support arm, referring to FIG. 18, the infusion solution pump support arm is constructed as a fixed cantilever 16. One end of the fixed cantilever is fixedly connected to the main beam 12. The medicine solution pump rack assembly 28 is slidably connected to the slide rail 38 on the fixed cantilever through the U-shaped infusion solution pump sliding assembly 26, so that the medicine solution pump rack assembly 28 slides along a side of the hospital bed to expand and rotate. The alarm indicator 17 is arranged at a front end position of the fixed cantilever. The examination illuminating lamp 32 is arranged on the fixed cantilever through the rotary support rod 14 and the fixed arm 15 in cooperation.

**[0053]** As an improved structure of the infusion solution pump support arm, referring to FIG. 19, the infusion solution pump support arm is a combined structure of two rotating arms 27. The two rotating arms are connected up and down from end to end. One end of one rotating arm is connected to the main beam 12, and one end of the other rotating arm movably lifts the medicine solution pump rack assembly 28. In this way, the medicine solution pump rack assembly 28 is expanded, rotated and moved along a side of the hospital bed.

**[0054]** In the implementation of the present invention, the medical gas tube security control device includes a tube valve 39 and an oxygen pressure monitoring device 41 connected to a medical gas tube 40. The oxygen pressure monitoring device is connected to the alarm indicator 17. The alarm indicator 17 prompts an alarm when the oxygen pressure monitoring device detects a leak or unstable pressure in the medical gas tube.

**[0055]** In the implementation of the present invention, the hidden strong/weak power control box II 21 and the hidden strong/weak power control box I 37 respectively include a strong power socket, a weak power interface, a ground terminal, a circuit breaker 49, and a leakage switch.

**[0056]** In the implementation of the present invention, the medical image-text digital information device is constructed as a medical-grade image display.

**[0057]** In the implementation of the present invention, the medical image-text digital information device is a medical-grade imaging-dedicated all-in-one computer.

**[0058]** In the implementation of the present invention, the medical image-text digital information device is an all-in-one touch screen computer.

**[0059]** In the implementation of the present invention, the medical image-text digital information device is a tablet computer.

**[0060]** In the implementation of the present invention, the ventilator lifting platform 2 and the working platform 17 each include a platform plate with a drawer, and a

hidden power socket box II 42 on both sides of the drawer 43 below the platform plate. The hidden power socket box II 42 is provided therein with a power socket and a take-up device.

**[0061]** In the implementation of the present invention, the ventilator lifting platform 2 is connected to the monitoring column 4 through a lifting assembly. The lifting assembly includes a connecting rod 44, a guide rail device 45, and an electric push rod 46.

**[0062]** Referring to FIG. 20, FIG. 21, FIG. 22 and FIG. 23, in an implementation, the nursing column 23 is provided with a medical supply storage cabinet assembly. The implementation differs from the preferred implementation in that: the nursing column 23 is constructed as a medical supply storage cabinet assembly; the nursing function assembly includes a stethoscope hanger 25, a flashlight hanger, a negative pressure straw box, a cold/hot freezer 5, a hidden strong/weak power control box 121 and a working platform 22.

**[0063]** In the implementation, the nursing column 23 is provided with a medical supply storage cabinet assembly, the medical supply storage cabinet assembly on the nursing column 23 is a cavity 55 with an active door 57. The cavity 55 is provided therein with a layered partition 56. The hot/cold freezer 5 is arranged in an inner cavity of the nursing column 23 below the medical supply storage cabinet assembly. The monitoring column 4 may be provided with two embedded storage cavities 6.

**[0064]** As an improvement on the medical supply storage cabinet assembly, the medical supply storage cabinet assembly may be constructed as an open structure.

**[0065]** As shown in FIG. 24, the medical supply storage cabinet assembly may also be independently constructed and externally connected to an external cabinet/box/frame 58 of the nursing column 23.

**[0066]** In the implementation of the present invention, as shown in FIG. 4 and FIG. 8, a rigid medical gas tube 40 extends from a floor into the main beam 12, the monitoring column 4 and the nursing column 23 to correspondingly connect a medical gas tube security control device and a medical gas terminal. A strong/weak power supply 50 extends from a floor into the main beam, the monitoring column and the nursing column to correspondingly connect a power security control device and a strong/weak power socket interface.

**[0067]** In the implementation of the present invention, the rigid medical gas tube 40 extends from a ceiling into the main beam 12, the monitoring column 4 and the nursing column 23 to correspondingly connect a medical gas tube security control device and a medical gas terminal. A strong/weak power supply 50 extends from a ceiling into the main beam, the monitoring column and the nursing column to correspondingly connect a power security control device and a strong/weak power socket interface.

**[0068]** In the implementation of the present invention, the rigid medical gas tube 40 may further laterally extend from a wall into the main beam 12, the monitoring column 4 and the nursing column 23 to correspondingly connect a medical gas tube security control device and a medical gas terminal. A strong/weak power supply 50 laterally extends from a wall into the main beam, the monitoring column and the nursing column to correspondingly connect a power security control device and a strong/weak power socket interface.

**[0069]** In a preferred implementation of the present invention, one end of the main beam 12 extends rearward to form a horizontally segmented structure, and the nursing column 23 is connected to one end of a rearward horizontal segment of the main beam 12.

**[0070]** As shown in FIG. 29, in another implementation of the present invention, one end of the main beam 12 extends forward to combine with a hospital bed. The implementation differs from the preferred implementation in that: one end of the main beam 12 extends forward to form a horizontally segmented structure, and the nursing column 23 is connected to one end of a forward horizontal segment of the main beam 12.

**[0071]** As shown in FIG. 27 and FIG. 28, in an implementation of the present invention, one end of the main beam extends forward to combine with a hospital bed. The implementation differs from the preferred implementation in that: the standing ICU nursing workstation includes a horizontally arranged main beam 12, and a monitoring column 4 and a nursing column 23 which are respectively connected to two ends of the main beam 12 and extend to be fixed to a floor. The main beam is provided with a sleep lamp 11 (having a reflective device 10), a patient information digital display screen 13 and an auxiliary illuminating lamp 33. One end of the main beam 12 extends forward to form a horizontally segmented structure, and the nursing column is connected to one end of a forward horizontal segment of the main beam 12. The forward horizontal segment of the main beam 12 is respectively provided with an alarm indicator 17, a light strip 60, a medicine solution pump rack assembly 28 and an examination illuminating lamp 32. The monitoring column 4 is provided with a treatment monitoring function assembly. The nursing column 23 is provided with a nursing function assembly. The monitoring column and the nursing column 23 are provided with a medical gas tube security control device and a power supply security control device. The rigid medical gas tube 40 extends into the main beam, the monitoring column and the nursing column to correspondingly connect a medical gas tube security control device and a medical gas terminal. A strong/weak power supply 50 extends into the main beam, the monitoring column and the nursing column to correspondingly connect a power security control device and a strong/weak power socket interface. The medicine solution pump rack assembly 28 is slidably connected to a slide rail on the forward horizontal segment of the main beam 12. A planar layout formed by the monitoring column 4, the nursing column 23 and the main beam 12 can change a position, a direction, a distance and an angle thereof according to a clinical need.

**[0072]** As shown in FIG. 30 and FIG. 31, in an imple-

mentation of the present invention, two ends of the main beam combine with a hospital bed. The implementation differs from the preferred implementation in that: the standing ICU nursing workstation includes a horizontally arranged main beam 12, and a monitoring column 4 and a nursing column 23 which are respectively connected to two ends of the main beam 12 in parallel and extend to be fixed to a floor. The main beam is provided with a sleep lamp 11 (having a reflective device 10), a patient information digital display screen 13, an auxiliary illuminating lamp 33 and an infusion solution pump support arm. The infusion solution pump support arm is provided with an alarm indicator 17, a medicine solution pump rack assembly 28 and an examination illuminating lamp 32. The monitoring column 4 is provided with a treatment monitoring function assembly. The nursing column 23 is provided with a nursing function assembly. The monitoring column 4 and the nursing column 23 are provided with a medical gas tube security control device and a power supply security control device. A rigid medical gas tube 40 extends into the main beam, the monitoring column and the nursing column to correspondingly connect a medical gas tube security control device and a medical gas terminal. A strong/weak power supply 50 extends into the main beam, the monitoring column and the nursing column to correspondingly connect a power supply security control device and a strong/weak power socket interface. A planar layout formed by the monitoring column 4, the nursing column 23, the infusion solution pump support arm and the main beam 12 can change a position, a direction, a distance and an angle thereof according to a clinical need.

**[0073]** In the implementation of the present invention, the medical gas tube 40 is made of a rigid metal material.

**[0074]** In the implementation of the present invention, the medical gas tube 40 is made of a rigid non-metallic material.

**[0075]** In the implementation of the present invention, the nursing workstation is suspended by using a hanging tube 61 and fixed to a floor.

**[0076]** In the implementation of the present invention, the nursing workstation provides a medical equipment bearing device, a strong/weak power socket interface, a medical gas interface, a basic information display, and a device for acquiring, browsing, recording, transmitting and storing medical image and medical care digital information.

**[0077]** As an improvement of the implementation of the present invention, the nursing workstation further includes a patient lifting and moving device 62 connected to the main beam 12. The patient lifting and moving device adopts a lifting and moving arm 6203. The lifting and moving arm is connected to the main beam 12 through a fixed seat 6201. The lifting and moving arm is movably connected to the fixed seat through a shaft 6202. The lifting and moving arm is provided with a sling 6205 driven by a lifting motor 6204 and provided with a hook 6206.

**[0078]** In an improved implementation of the present invention, the patient lifting and moving device adopts a lifting arm 6207. The lifting arm is connected to the main beam 12 through a fixed seat 6201. The lifting arm is movably connected to the fixed seat through a shaft 6202 and is driven by a driving device 6208.The lifting arm is fixedly provided with a sling 6205 with a hook 6206

**[0079]** In an improved implementation of the present invention, the lifting arm 6207 is connected to the main beam 12 through a shaft seat 6209. One end of the lifting arm is connected to the driving device 6208. The lifting arm is fixedly provided with a sling 6205 with a hook 6206.

**[0080]** It should be noted that, in the above technical solution of the present invention, an angular orientation between one end of the main beam 12 and the horizontal segment extending in a different direction is determined according to a need of clinical use. An angular orientation of the connection between the nursing column 23 and the fixed cantilever 16 as well as between the monitoring column 4 and the main beam 12 is also determined according to a need of clinical use.

**[0081]** The present invention is described in combination with different preferred implementations. It should be understood that different modifications and changes may be made on the basis of these preferred implementations without departing from the scope of the present invention as set forth in the claims. That is, the present invention is not limited to the above implementations. In particular, the nursing workstation may be derived by a combination of different configurations and connection methods of the present invention, but this combination should fall within the scope protected by the claims of the present invention.

## Claims

1. A standing intensive care unit (ICU) nursing workstation, comprising a horizontally arranged main beam (12), and a monitoring column (4) and a nursing column (23) which are respectively connected to two ends of the main beam (12) and extend to be fixed to a floor, wherein one end of the main beam (12) extends in at least one direction different therefrom to form a horizontally segmented structure, and the nursing column is connected to one end of a horizontal segment of the main beam (12); the main beam is provided with a sleep lamp (11) (having a reflective device (10)), a patient information digital display screen (13), an auxiliary illuminating lamp (33) and an infusion solution pump support arm; the infusion solution pump support arm is provided with an alarm indicator (17), a medicine solution pump rack assembly (28) and an examination illuminating lamp (32); the monitoring column (4) is provided with a treatment monitoring function assembly; the nursing column (23) is provided with a nursing function assembly; the monitoring column (4) and the nursing column (23) are respectively provided with a medical

gas tube security control device and a power supply security control device; a rigid medical gas tube (40) extends to the main beam, the monitoring column and the nursing column to correspondingly connect a medical gas tube security control device and a medical gas terminal; a strong/weak power supply (50) extends to the main beam, the monitoring column and the nursing column to correspondingly connect a power supply security control device and a strong/weak power socket interface; a planar layout formed by the monitoring column (4), the nursing column (23), the infusion solution pump support arm and the main beam (12) can change a position, a direction, a distance and an angle thereof according to a clinical need.

**2.** The standing ICU nursing workstation according to claim 1, wherein the nursing column (23) adopts a column structure; the nursing function assembly comprises a stethoscope hanger (25), a flashlight hanger, a negative pressure straw box, a hidden strong/weak power control box I (21), a working platform (22), a medical image-text digital information device (19) and a keyboard support plate (20); the medical image-text digital information device (19) is externally attached to the nursing column (23); a keyboard placement area (206) and a mouse placement area (205) are respectively arranged above the keyboard support plate (20); a keyboard movable cover (201) and a mouse movable cover (204) connected to a keyboard base support (202) in an inverted manner are arranged above the keyboard placement area and the mouse placement area.

**3.** The standing ICU nursing workstation according to claim 1, wherein the nursing column (23) adopts a storage box device (53); the nursing function assembly comprises the medical image-text digital information device (19), the working platform (22), the flashlight hanger, the negative pressure straw box, the hidden strong/weak power control box I (21), the stethoscope hanger (25) and the keyboard drawer (54); the medical image-text digital information device (19) is embedded in a movable cabinet door (5301) of the storage box device (53).

**4.** The standing ICU nursing workstation according to claim 1, wherein the treatment monitoring function assembly of the monitoring column (4) comprises a ventilator lifting platform (2), an embedded storage cavity (6) (having a movable door (7)), a cold/hot freezer (5), a medical instrument platform (9), a hidden power socket box I (8) under the medical instrument platform, a medicinal pump rack rod assembly (34), a call intercom (35), a medical gas terminal (36) and a hidden strong/weak power control box II (37); the call intercom (35) is connected to the alarm indicator (17); the alarm indicator (17) prompts an alarm when the call intercom (35) is calling; the hidden power socket box I (8) is provided therein with a power socket and a take-up device.

**5.** The standing ICU nursing workstation according to claim 1, wherein the treatment monitoring function assembly of the monitoring column (4) comprises a ventilator lifting platform (2), an embedded storage cavity (6) (having a movable door (7)), a cold/hot freezer (5), a medicine solution pump rack rod assembly (34), a call intercom (35), a medical gas terminal (36), a hidden strong/weak power control box II (37), a monitoring module input/output interface (52) and an embedded monitoring information display screen (51); the call intercom (35) is connected to the alarm indicator (17); the alarm indicator (17) gives a prompt when the call intercom (35) is calling; the embedded monitoring information display screen (51) is embedded in the monitoring column (4) and cooperates with the monitoring module input/output interface (52) to display monitoring information.

**6.** The standing ICU nursing workstation according to claim 1, wherein the medicine solution pump rack assembly (28) is a medicine solution pump rack box; the medicine solution pump rack box comprises a suction terminal (29), a U-shaped infusion pump hanging rod (31), and a medicine solution hook shaft rod assembly (30), a take-up device, a power socket and a weak power interface.

**7.** The standing ICU nursing workstation according to claim 1, wherein the infusion solution pump support arm is a combined structure of a fixed cantilever (16) and a rotating arm (27); one end of the fixed cantilever is fixedly connected to the main beam (12), and one end of the rotating arm is slidably connected to a slide rail (38) on the fixed cantilever through a U-shaped infusion solution pump sliding assembly (26); the medicine solution pump rack assembly (28) is movably lifted to the other end of the rotating arm, so that the medicine solution pump rack assembly (28) slides along a side of a hospital bed to expand and rotate; the alarm indicator (17) is arranged at a front end position of the fixed cantilever; the examination illuminating lamp (32) is arranged on the fixed cantilever through a rotary support rod (14) and a fixed arm (15) in cooperation.

**8.** The standing ICU nursing workstation according to claim 1, wherein the infusion solution pump support arm is constructed as a fixed cantilever (16); one end of the fixed cantilever is fixedly connected to the main beam (12); the medicine solution pump rack assembly (28) is slidably connected to a slide rail (38) on the fixed cantilever through a U-shaped infusion solution pump sliding assembly (26), so that the medicine solution pump rack assembly (28) slides along

a side of a hospital bed to expand and rotate; the alarm indicator (17) is arranged at a front end position of the fixed cantilever; the examination illuminating lamp (32) is arranged on the fixed cantilever through a rotary support rod (14) and a fixed arm (15) in cooperation.

**9.** The standing ICU nursing workstation according to claim 1, wherein the infusion solution pump support arm is a combined structure of two rotating arms (27); the two rotating arms are connected up and down from end to end; one end of one rotating arm is connected to the main beam (12), and one end of the other rotating arm movably lifts the medicine solution pump rack assembly (28), so that the medicine solution pump rack assembly (28) is expanded, rotated and moved along a side of the hospital bed.

**10.** The standing ICU nursing workstation according to claim 1, wherein the medical gas tube security control device comprises a tube valve (39) and an oxygen pressure monitoring device (41) connected to a medical gas tube (40); the oxygen pressure monitoring device is connected to the alarm indicator (17); the alarm indicator (17) prompts an alarm when the oxygen pressure monitoring device detects a leak or unstable pressure in the medical gas tube.

**11.** The standing ICU nursing workstation according to any of claims 2-5, wherein the hidden strong/weak power control box II (21) and the hidden strong/weak power control box I (37) respectively comprise a strong power socket, a weak power interface, a ground terminal, a circuit breaker (49) and a leakage switch.

**12.** The standing ICU nursing workstation according to any of claims 2-3, wherein the medical image-text digital information device is constructed as a medical-grade image display.

**13.** The standing ICU nursing workstation according to any of claims 2-3, wherein the medical image-text digital information device is a medical-grade imaging-dedicated all-in-one computer.

**14.** The standing ICU nursing workstation according to any of claims 2-3, wherein the medical image-text digital information device is an all-in-one touch screen computer.

**15.** The standing ICU nursing workstation according to any of claims 2-3, wherein the medical image-text digital information device is a tablet computer.

**16.** The standing ICU nursing workstation according to any of claims 2-5, wherein the ventilator lifting platform (2) and the working platform (22) each comprise a platform plate with a drawer, and a hidden power socket box II (42) on both sides of the drawer (43) below the platform plate; the hidden power socket box II (42) is provided therein with a power socket and a take-up device.

**17.** The standing ICU nursing workstation according to any of claims 4-5, wherein the ventilator lifting platform (2) is connected to the monitoring column (4) through a lifting assembly; the lifting assembly comprises a connecting rod, a guide rail device (45) and an electric push rod (46).

**18.** The standing ICU nursing workstation according to claim 1, wherein the nursing column (23) is constructed as a medical supply storage cabinet assembly; the nursing function assembly comprises a stethoscope hanger (25), a cold/hot freezer (5), a flashlight hanger, a negative pressure straw box, a hidden strong/weak power control box I (21) and a working platform (22);
preferably, wherein the medical supply storage cabinet assembly on the nursing column (23) is a cavity (55) with an active door (57);
preferably, wherein the medical supply storage cabinet assembly is constructed as an open structure;
preferably, wherein the medical supply storage cabinet assembly is independently constructed and externally connected to an external cabinet/box/frame (58) of the nursing column (23).

**19.** The standing ICU nursing workstation according to claim 1, wherein the rigid medical gas tube (40) extends from a floor into the main beam (12), the monitoring column (4) and the nursing column (23) to correspondingly connect a medical gas tube security control device and a medical gas terminal; the strong/weak power supply (50) extends from a floor into the main beam, the monitoring column and the nursing column to correspondingly connect a power security control device and a strong/weak power socket interface.

**20.** The standing ICU nursing workstation according to claim 1, wherein the rigid medical gas tube (40) extends from a ceiling into the main beam (12), the monitoring column (4) and the nursing column (23) to correspondingly connect a medical gas tube security control device and a medical gas terminal; the strong/weak power supply (50) extends from a ceiling into the main beam, the monitoring column and the nursing column to correspondingly connect a power security control device and a strong/weak power socket interface.

**21.** The standing ICU nursing workstation according to claim 1, wherein the rigid medical gas tube (40) laterally extends from a wall into the main beam (12),

the monitoring column (4) and the nursing column (23) to correspondingly connect a medical gas tube security control device and a medical gas terminal; the strong/weak power supply (50) laterally extends from a wall into the main beam, the monitoring column and the nursing column to correspondingly connect a power security control device and a strong/weak power socket interface.

**22.** The standing ICU nursing workstation according to claim 1, wherein one end of the main beam (12) extends rearward to form a horizontally segmented structure, and the nursing column (23) is connected to one end of a rearward horizontal segment of the main beam (12).

**23.** The standing ICU nursing workstation according to claim 1, wherein one end of the main beam (12) extends forward to form a horizontally segmented structure, and the nursing column (23) is connected to one end of a forward horizontal segment of the main beam (12).

**24.** The standing ICU nursing workstation according to claim 1, wherein the medical gas tube (40) is made of a rigid metal material.

**25.** The standing ICU nursing workstation according to claim 1, wherein the medical gas tube (40) is made of a rigid non-metallic material.

**26.** The standing ICU nursing workstation according to claim 1, , wherein the nursing workstation is suspended by using a hanging tube (61) and fixed to the floor.

**27.** The standing ICU nursing workstation according to claim 1, , wherein the nursing workstation provides a medical equipment bearing device, a strong/weak power socket interface, a medical gas interface, a basic information display, and a device for acquiring, browsing, recording, transmitting and storing medical image and medical care digital information.

**28.** The standing ICU nursing workstation according to claim 1, wherein the nursing workstation further comprises a patient lifting and moving device (62) connected to the main beam (12); the patient lifting and moving device adopts a lifting and moving arm (6203); the lifting and moving arm is connected to the main beam (12) through a fixed seat (6201); the lifting and moving arm is movably connected to the fixed seat through a shaft (6202); the lifting and moving arm is provided with a sling (6205) driven by a lifting motor (6204) and provided with a hook (6206); preferably, wherein the patient lifting and moving device adopts a lifting arm (6207); the lifting arm is connected to the main beam (12) through a fixed seat (6201); the lifting arm is movably connected to the fixed seat through a shaft (6202) and is driven by a driving device (6208); the lifting arm is fixedly provided with a sling (6205) with a hook (6206); preferably, wherein the lifting arm (6207) is connected to the main beam (12) through a shaft seat (6209); one end of the lifting arm is connected to the driving device (6208); the lifting arm is fixedly provided with a sling (6205) with a hook (6206).

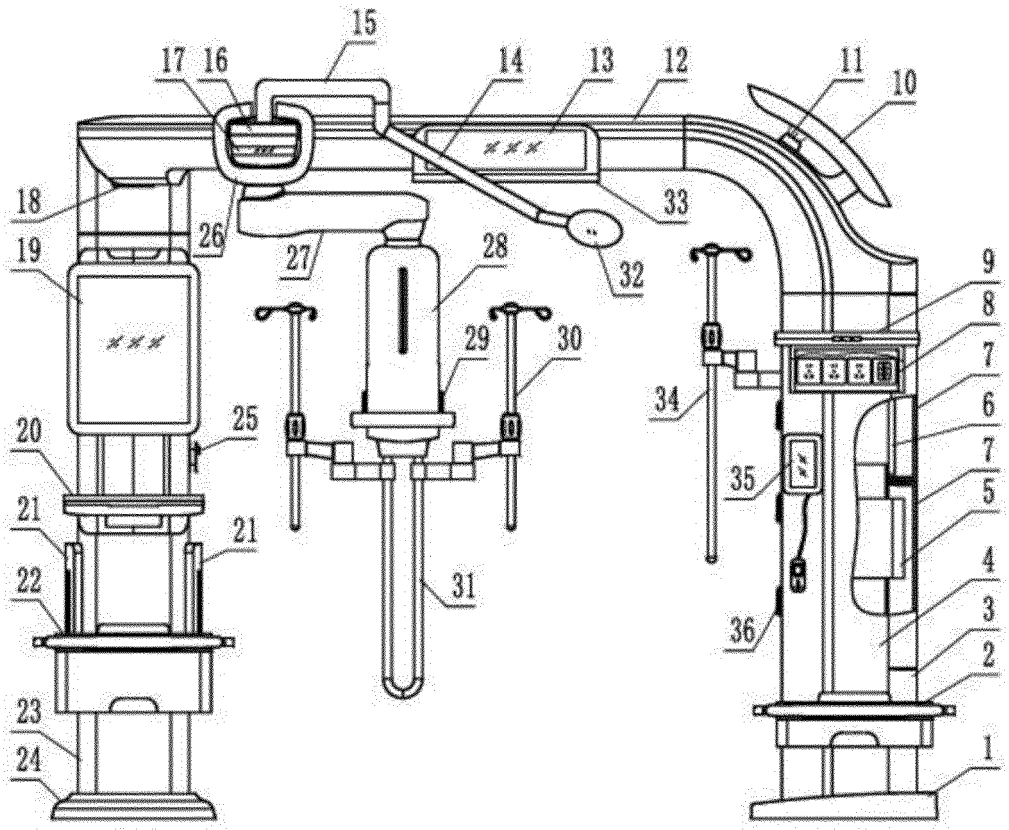
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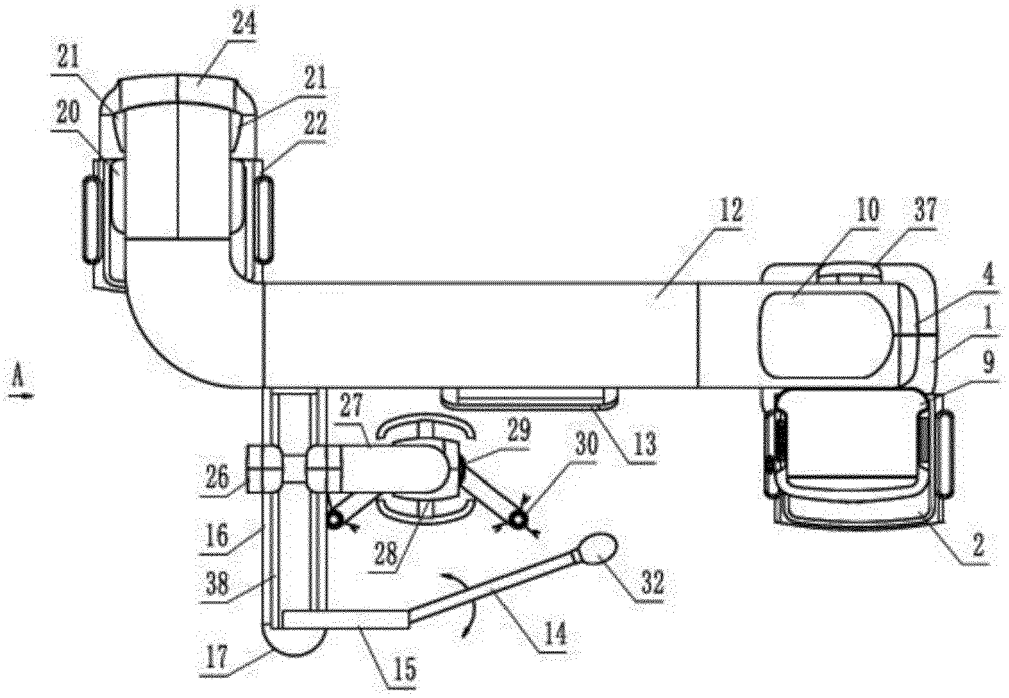
FIG. 1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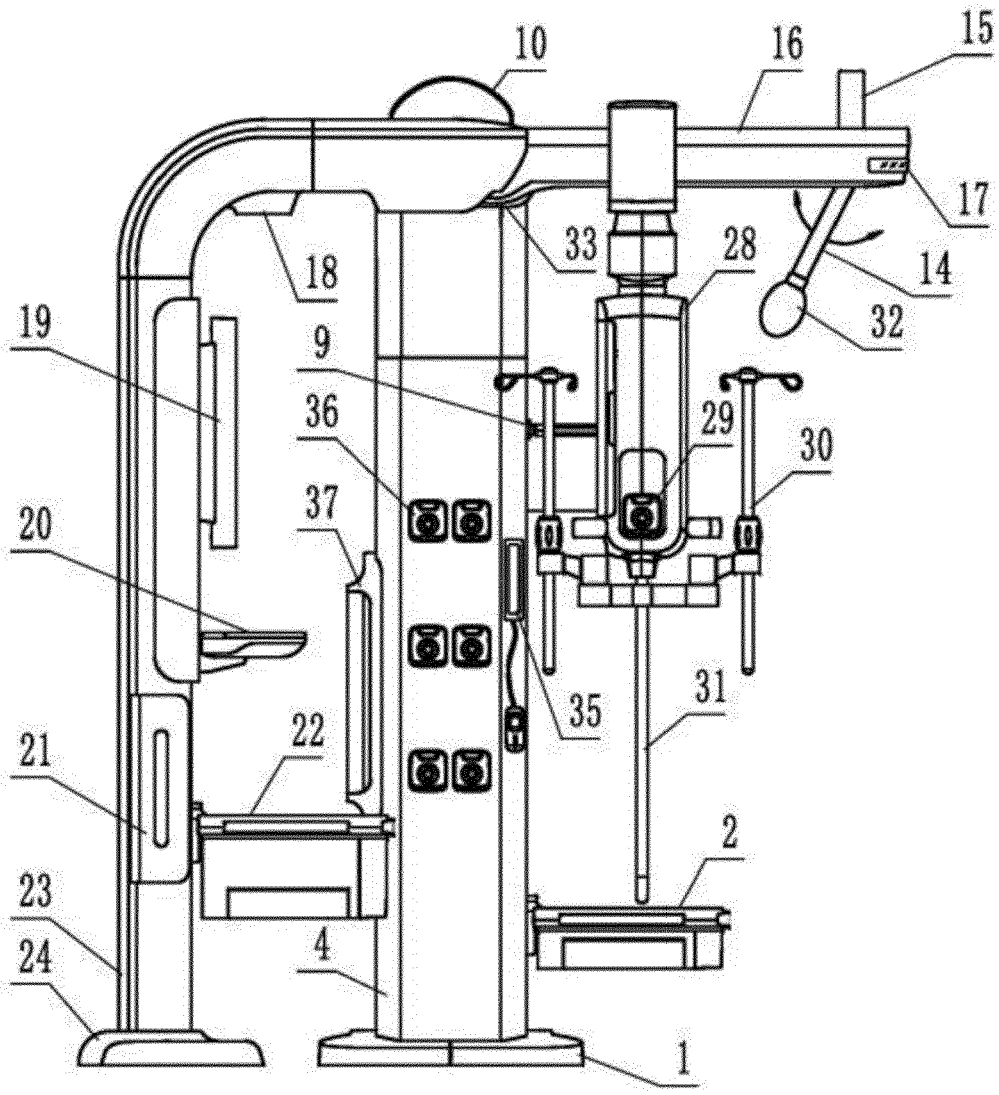


FIG. 3

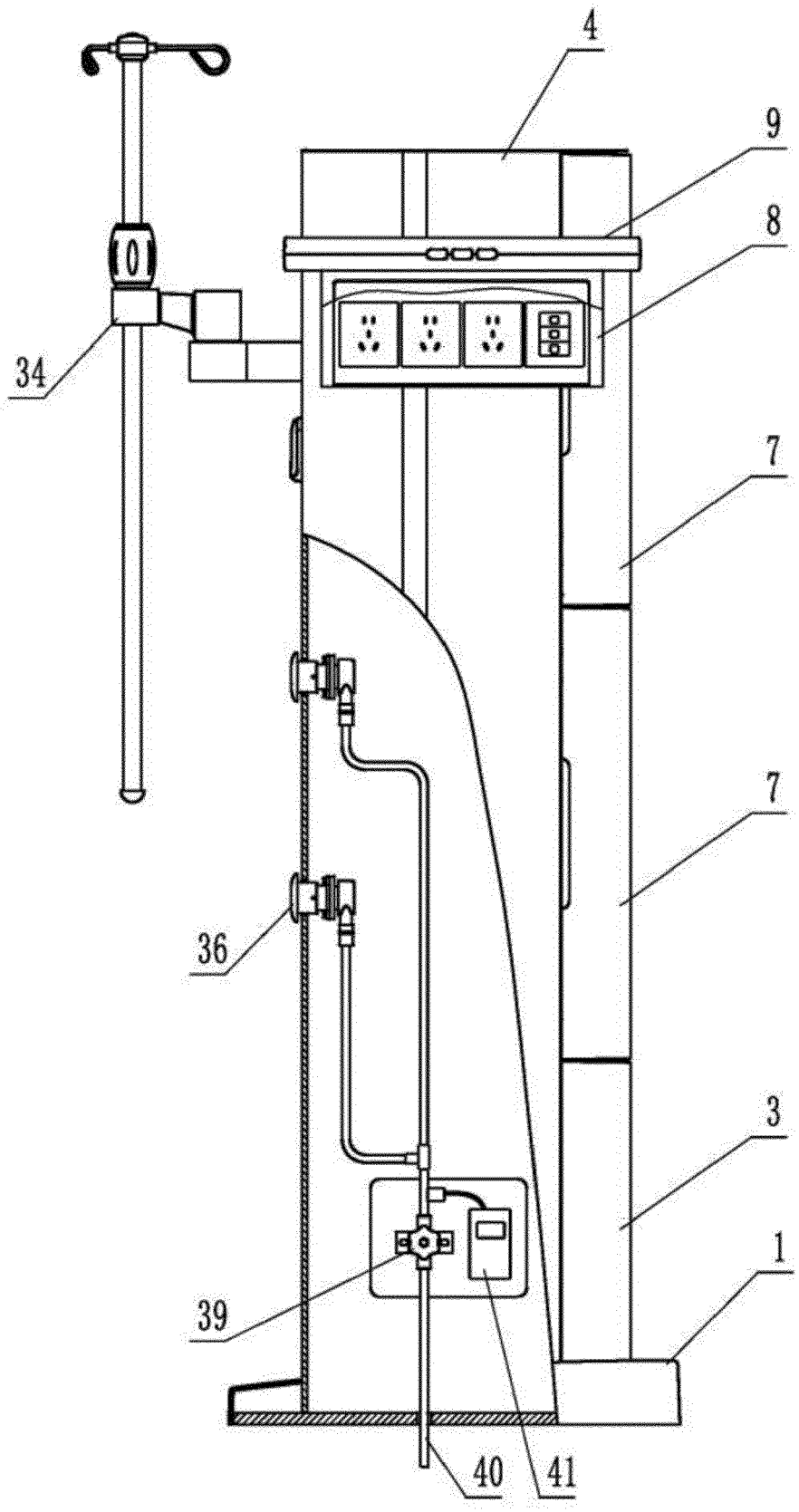


FIG. 4

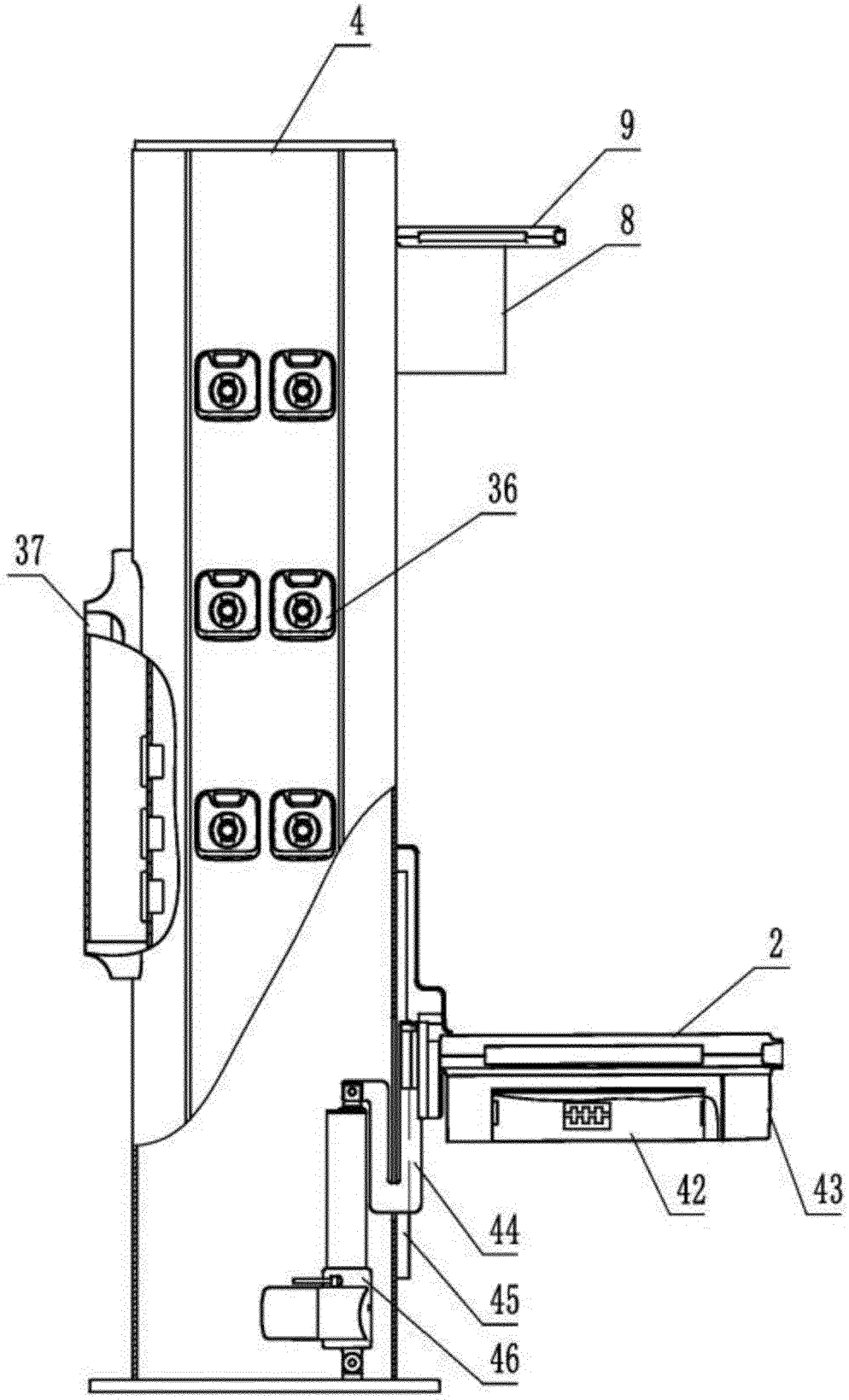


FIG. 5

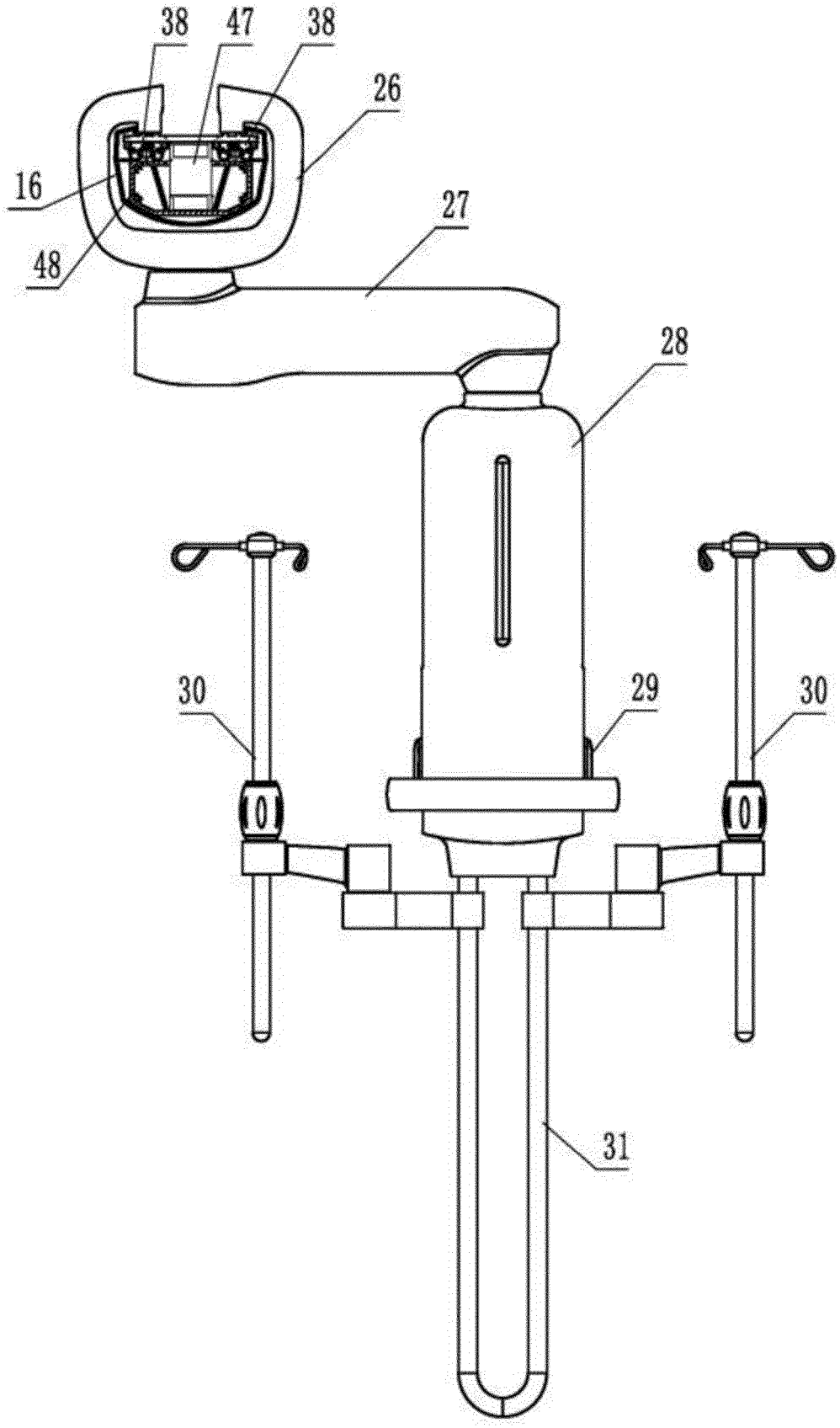


FIG. 6

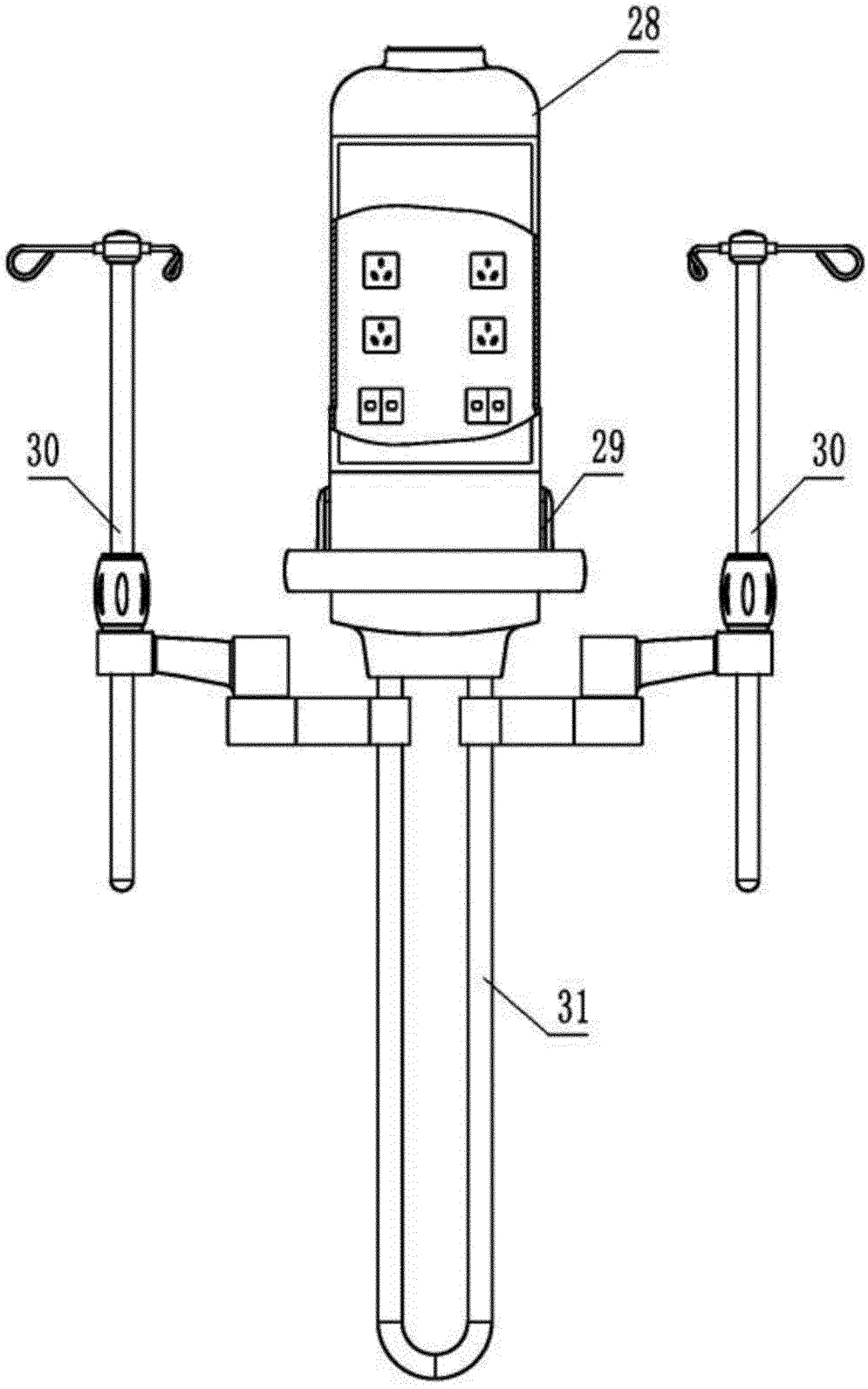


FIG. 7

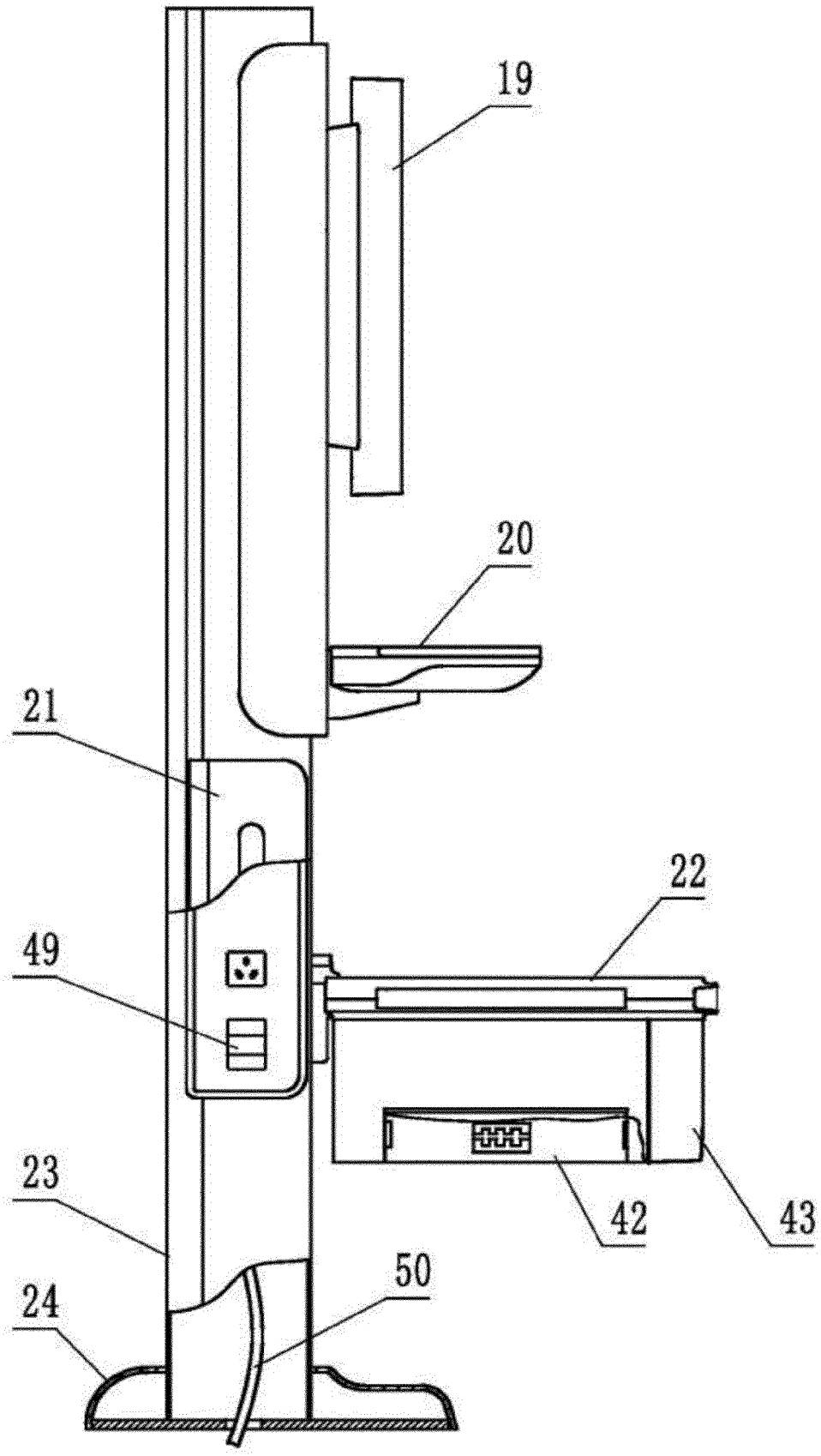


FIG. 8

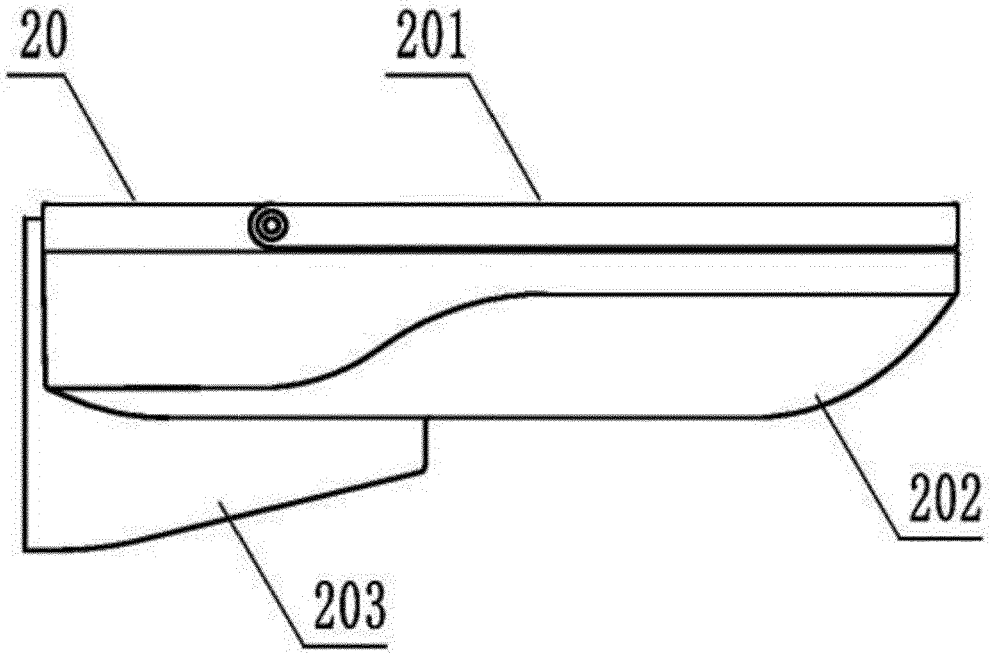


FIG. 9

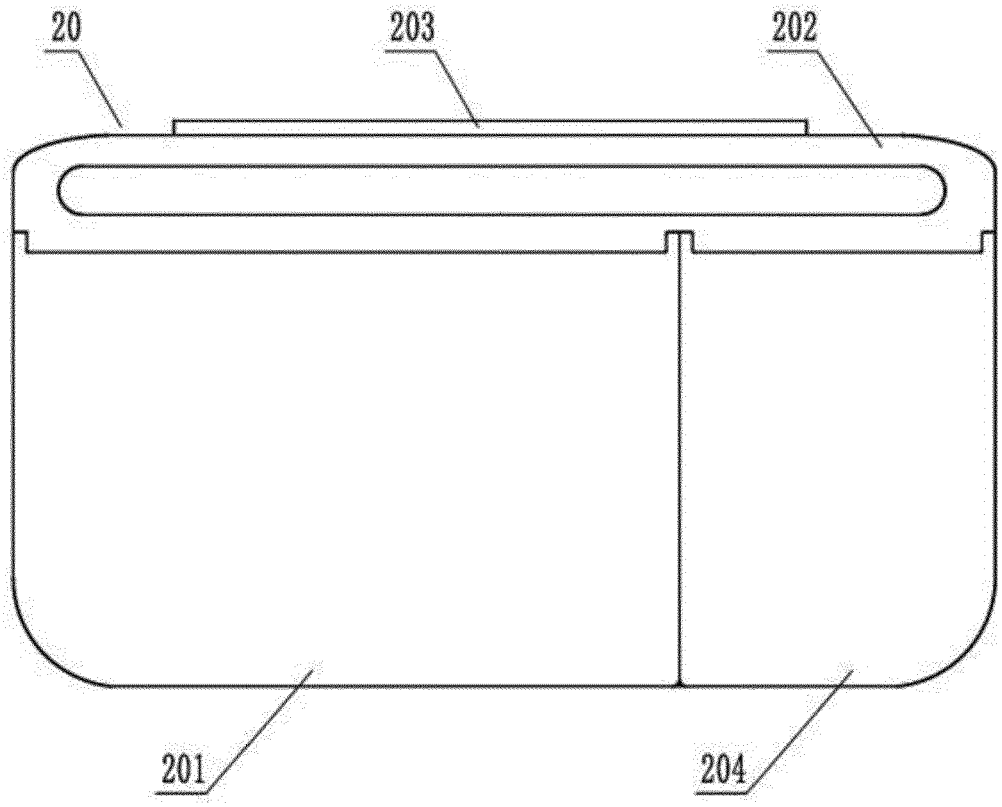


FIG. 10

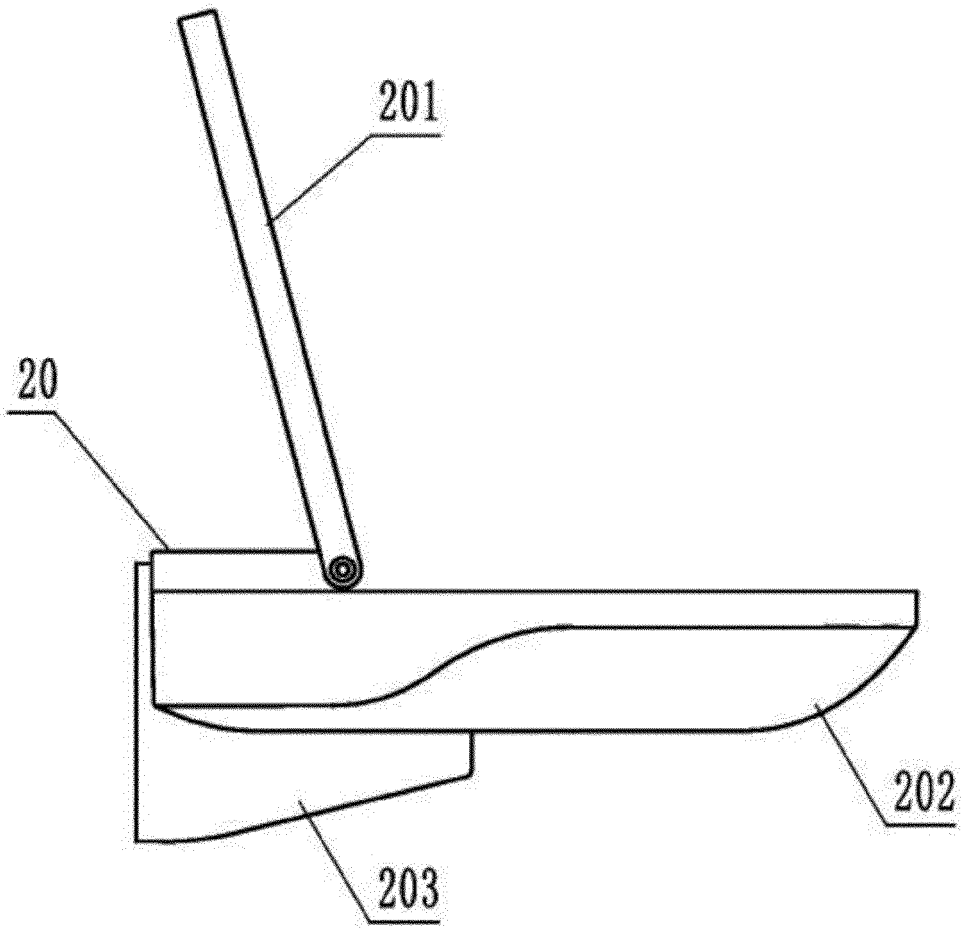


FIG. 11

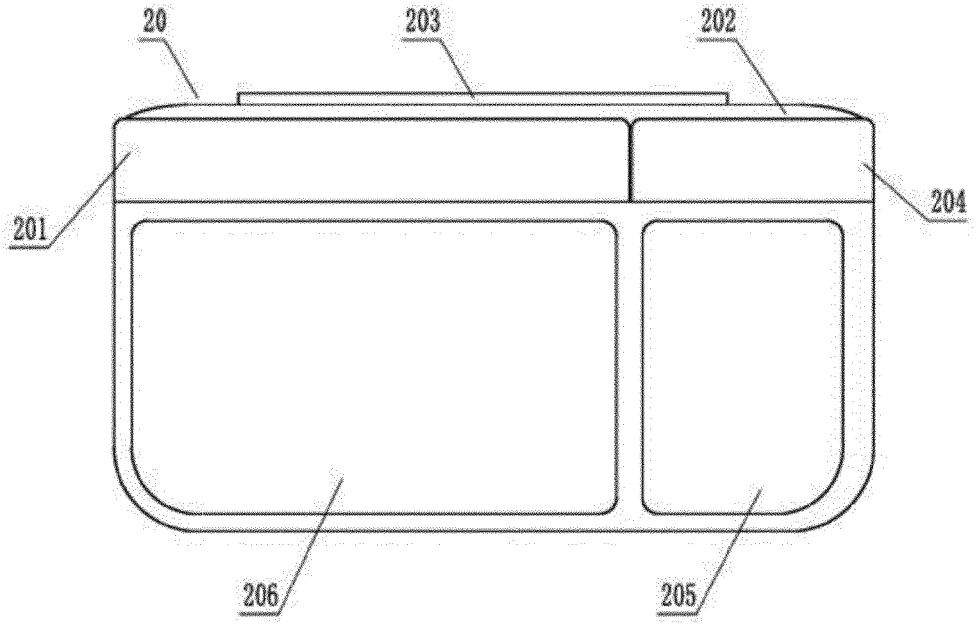


FIG. 12

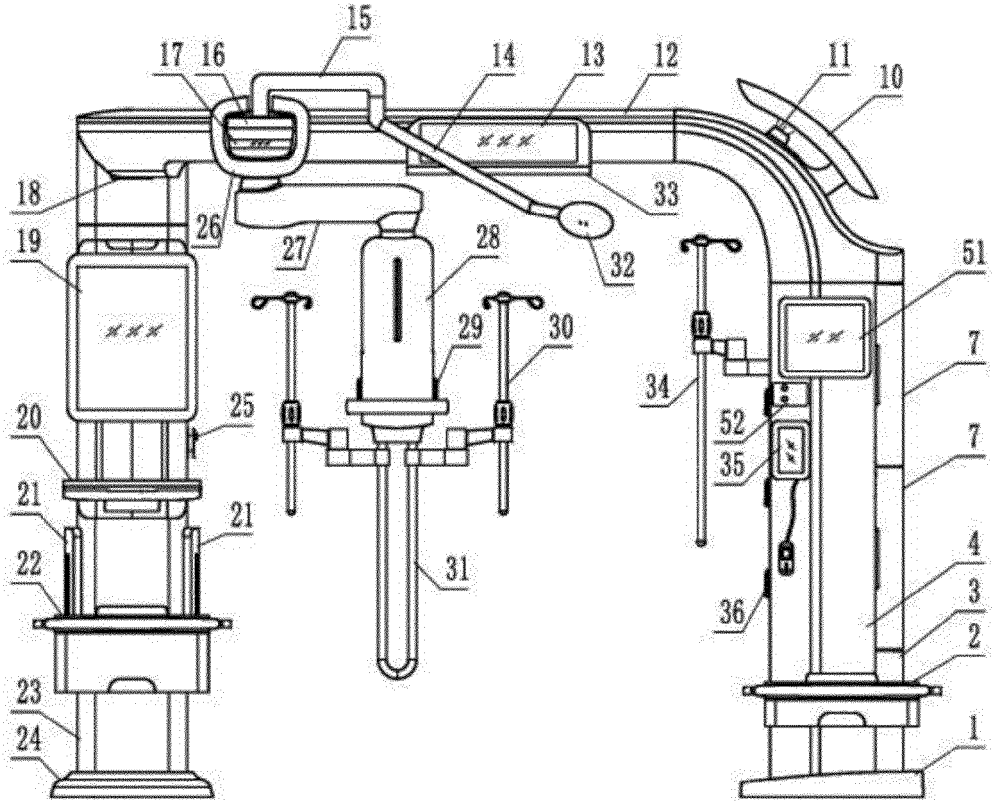
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FIG. 13

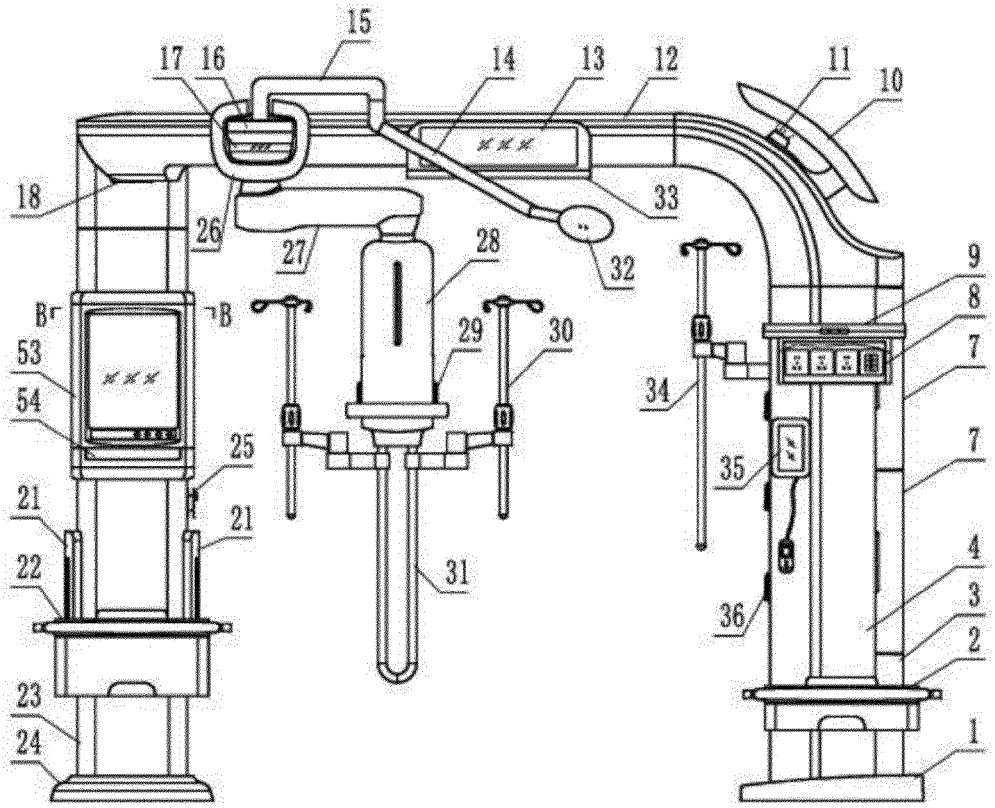
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FIG. 14

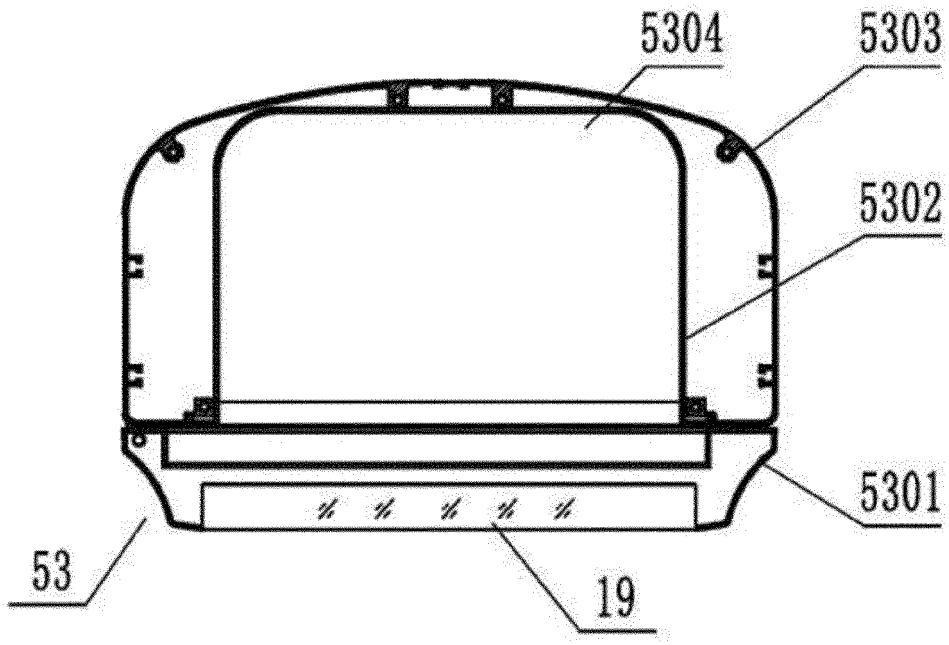


FIG. 15

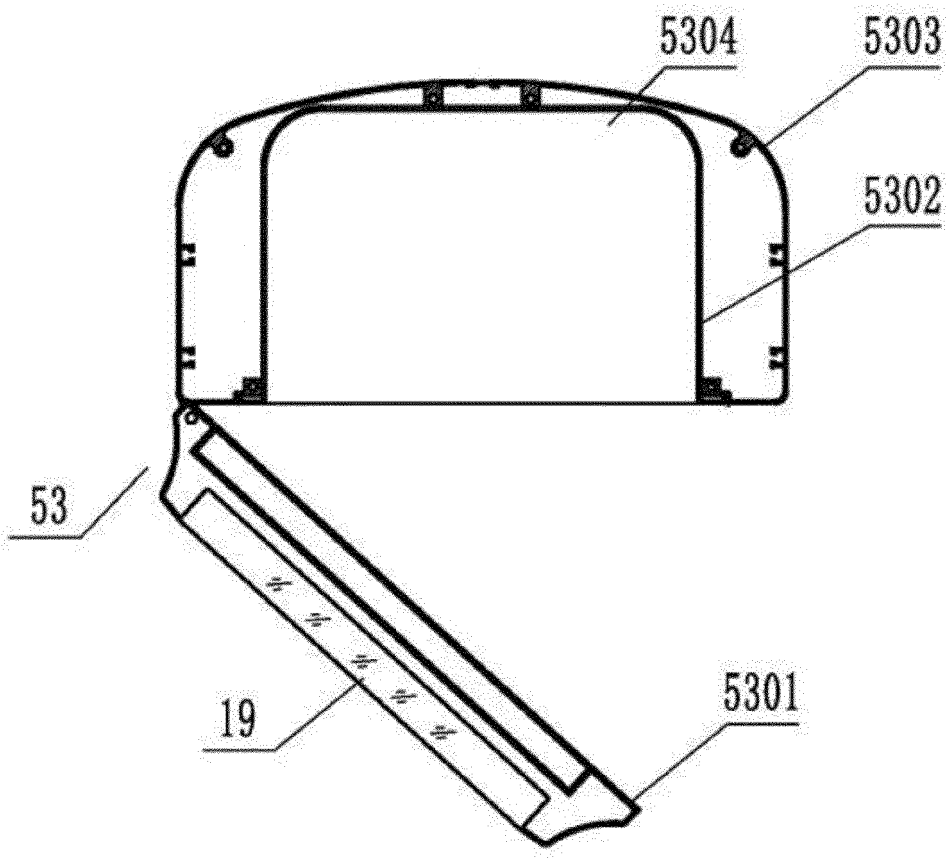

FIG. 16

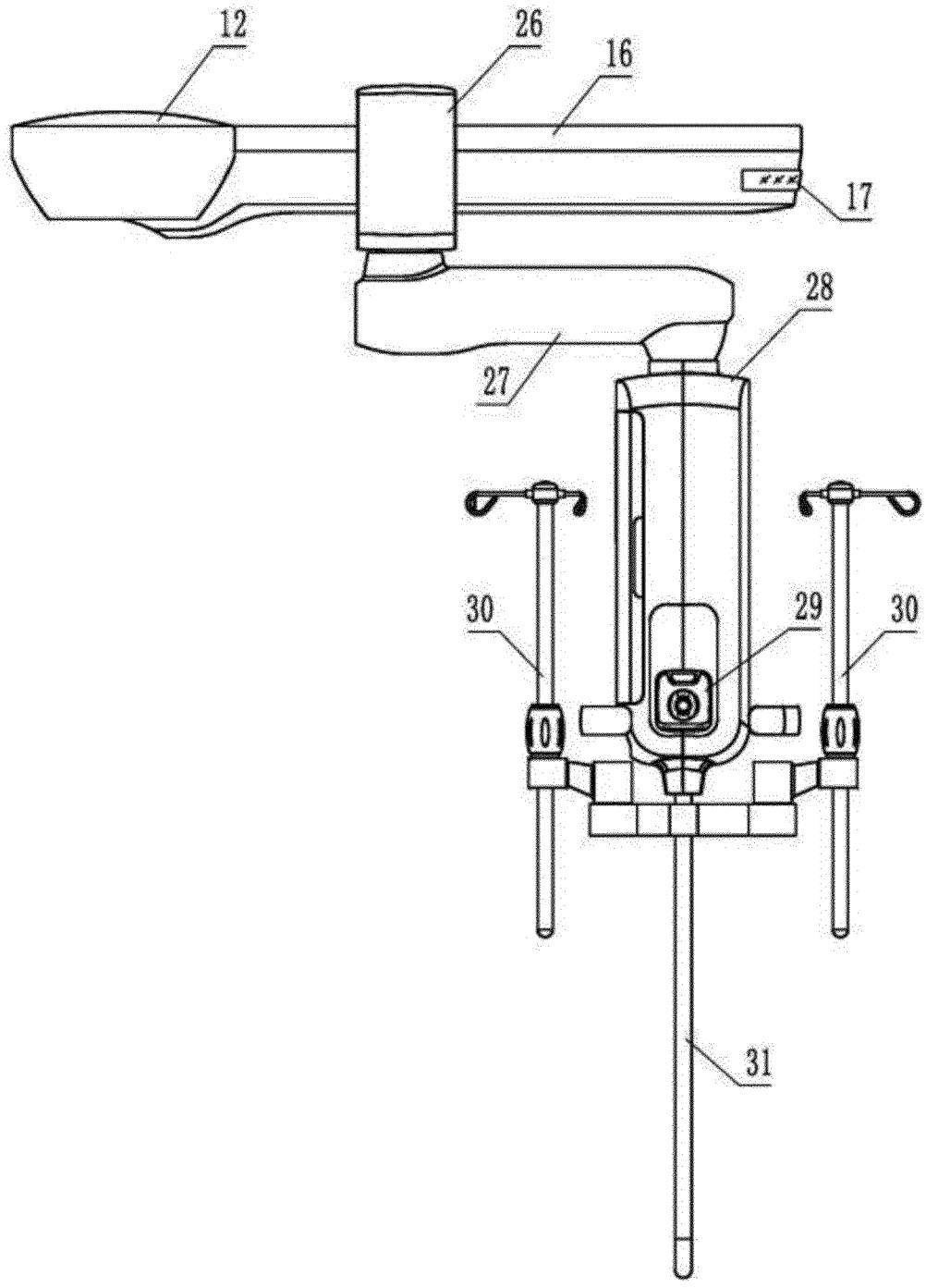


FIG. 17

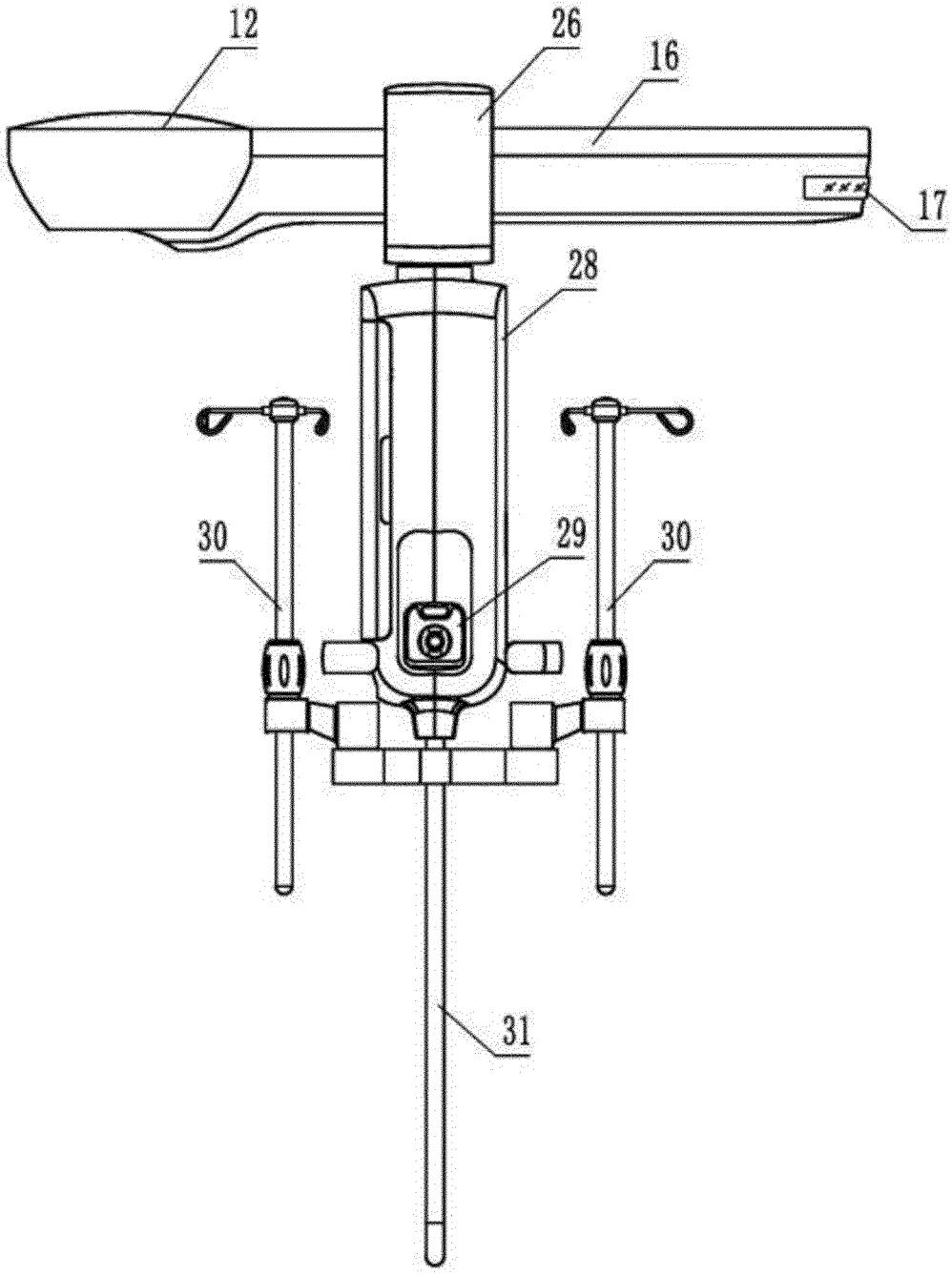


FIG. 18

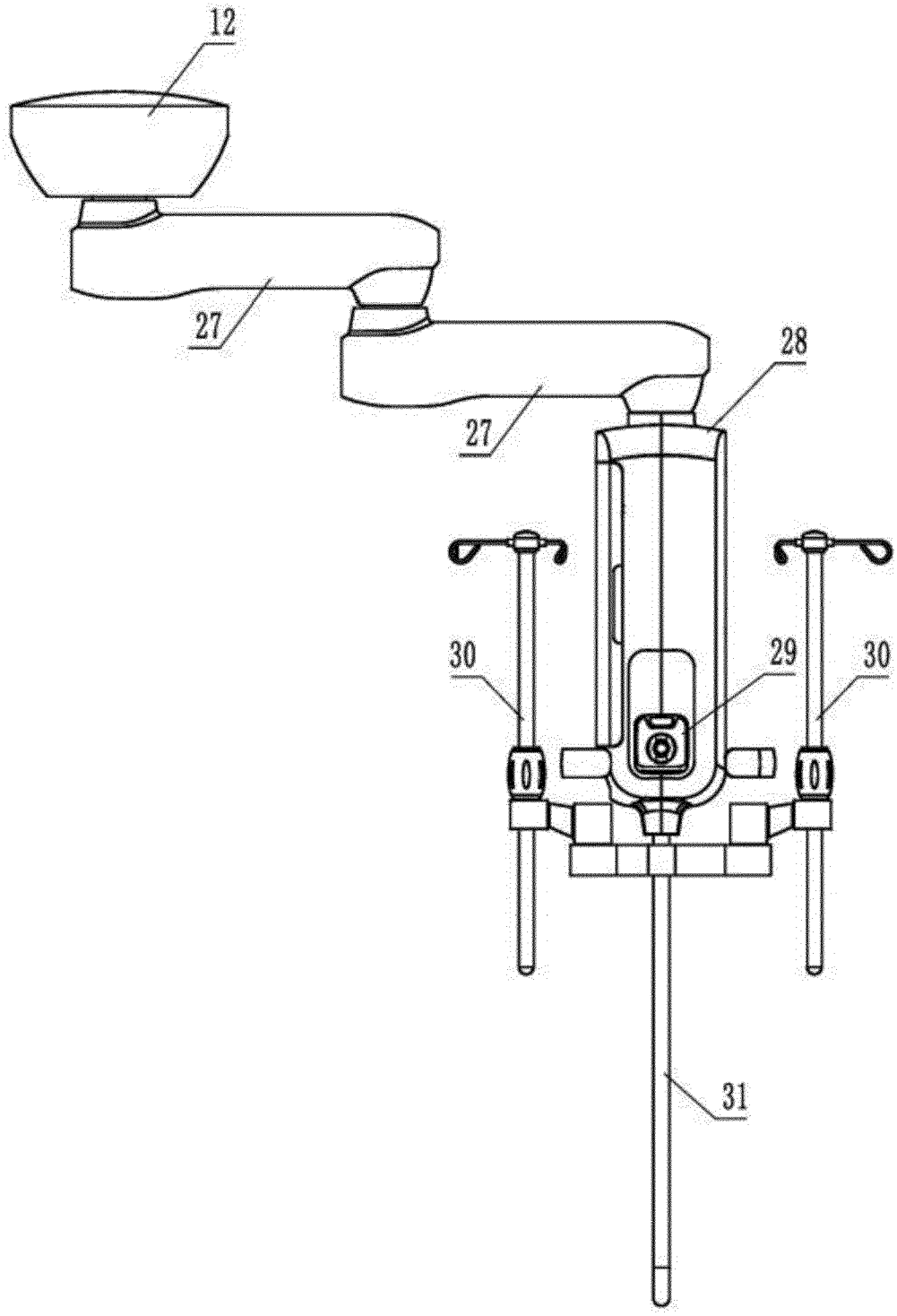


FIG. 19

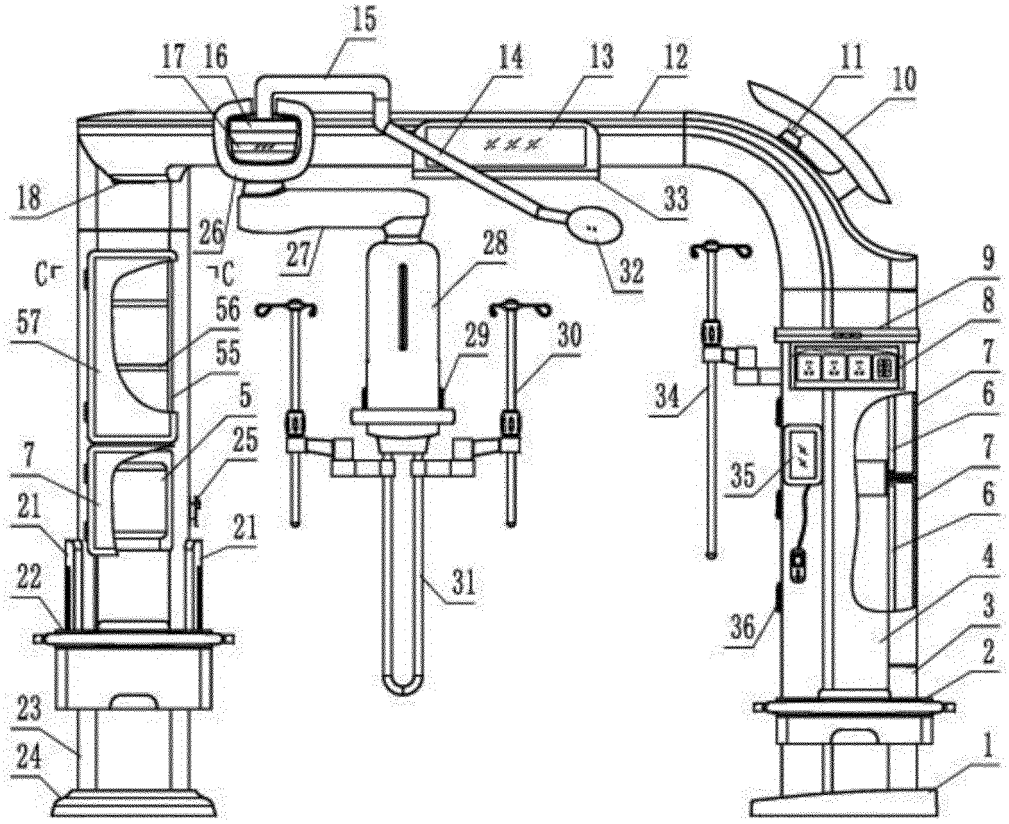
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FIG. 20

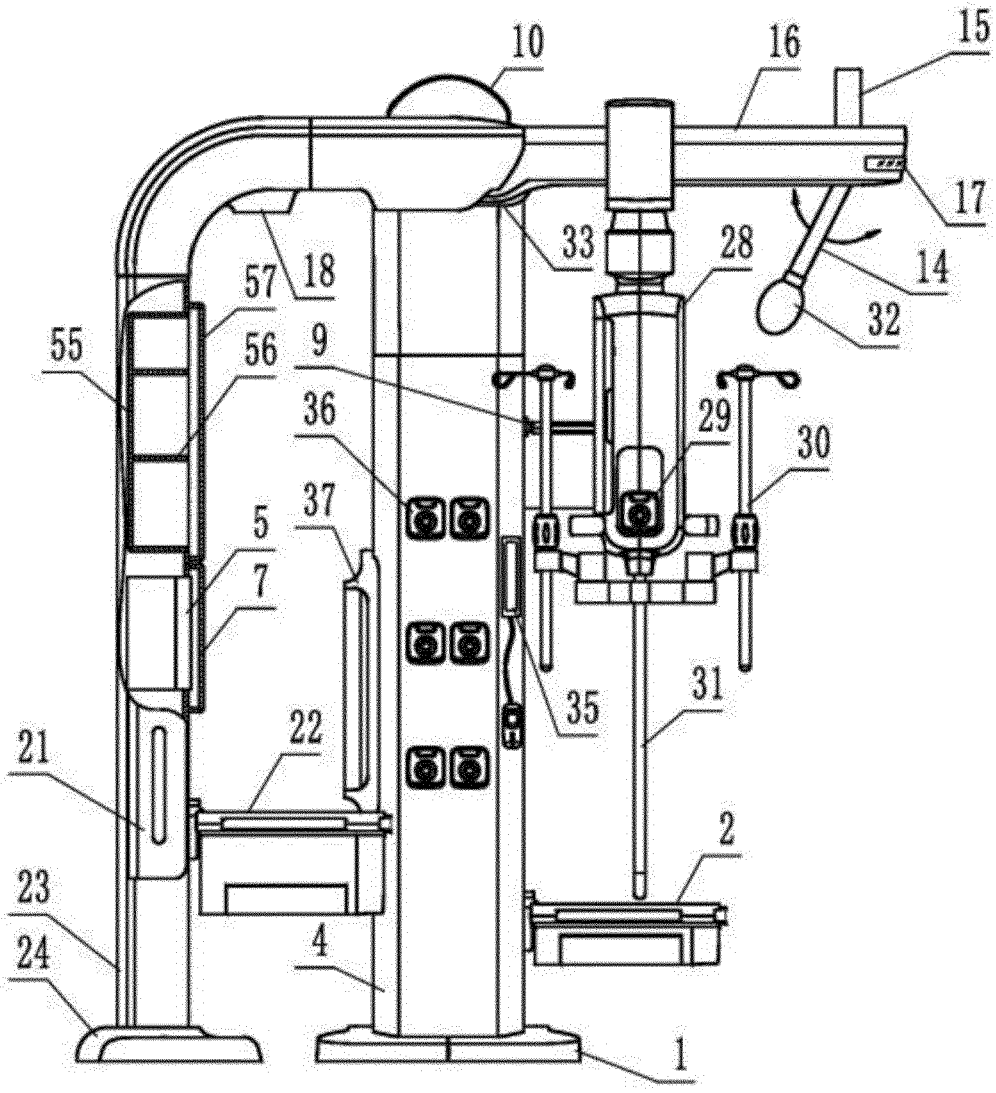
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FIG. 21

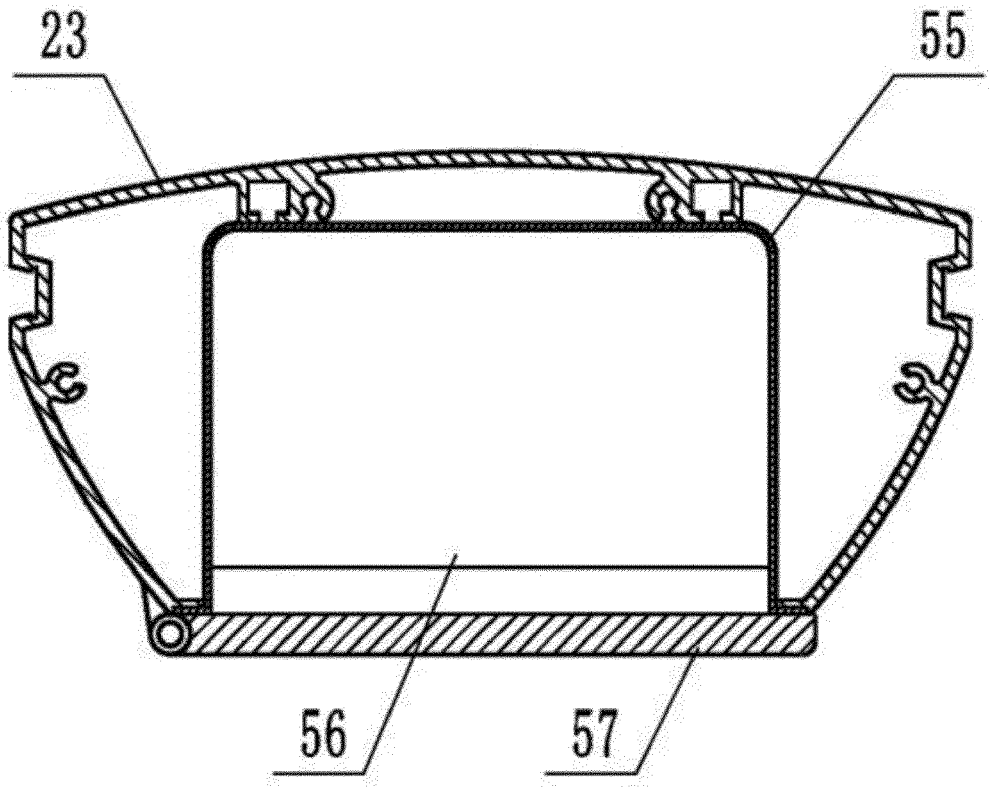


FIG. 22

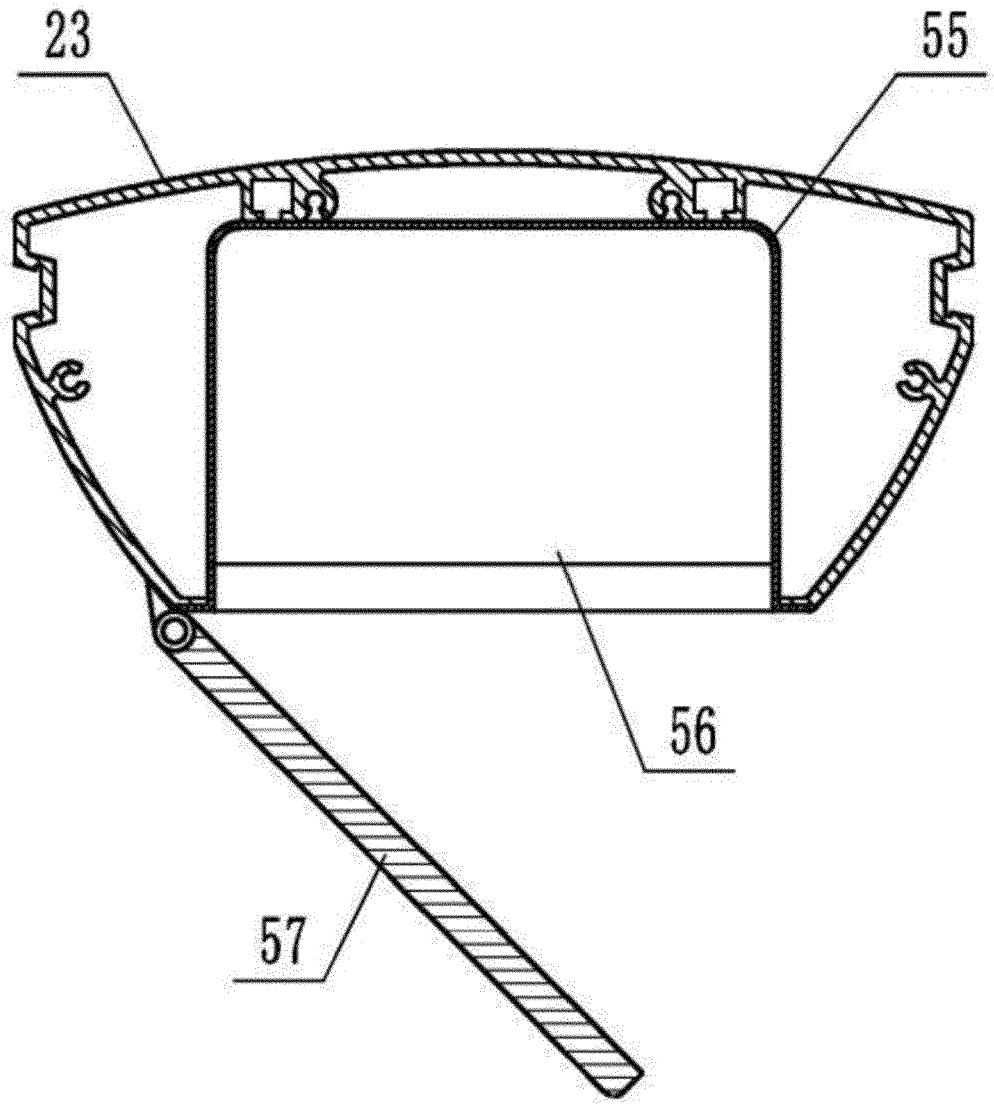


FIG. 23

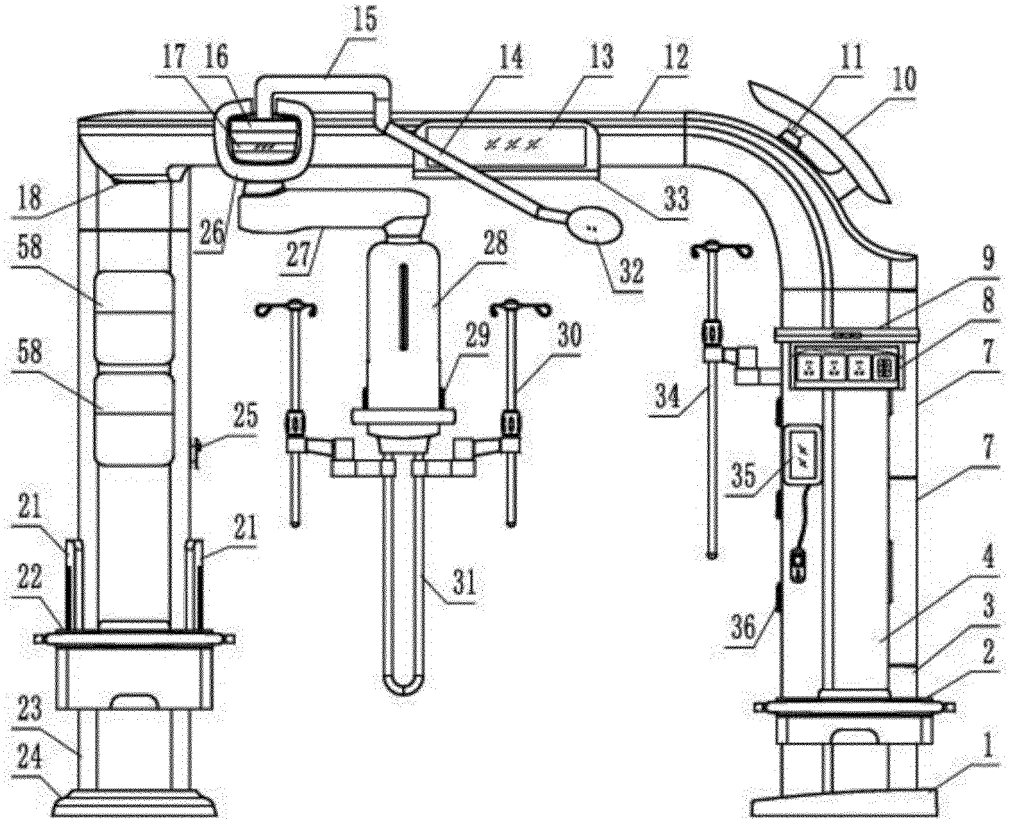
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FIG. 24

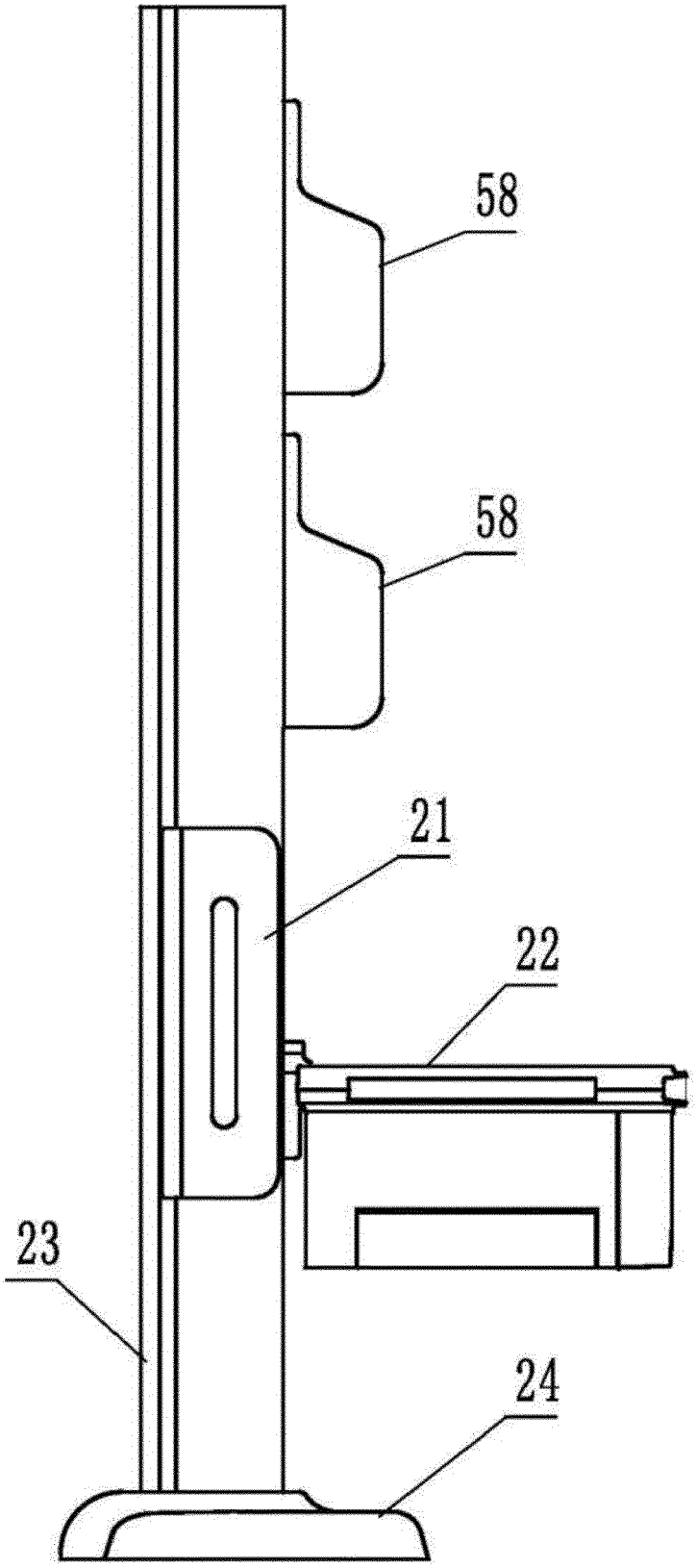


FIG. 25

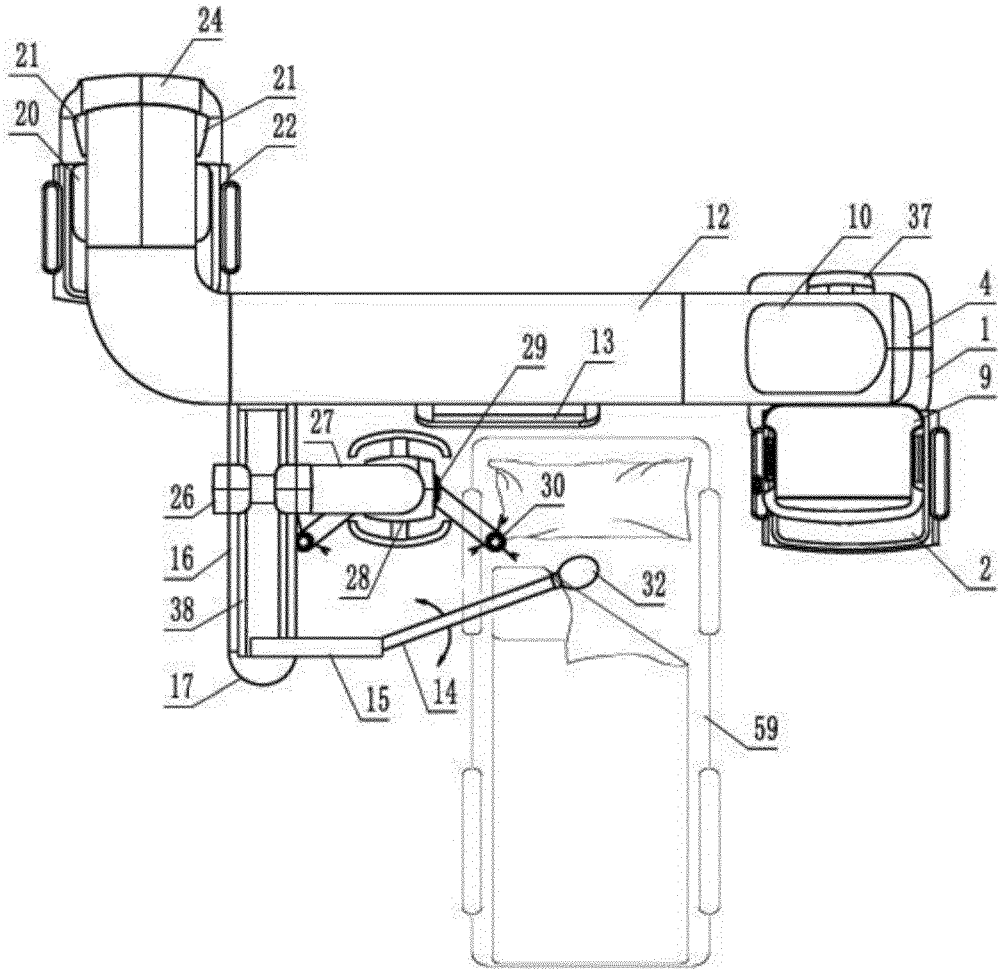


FIG. 26

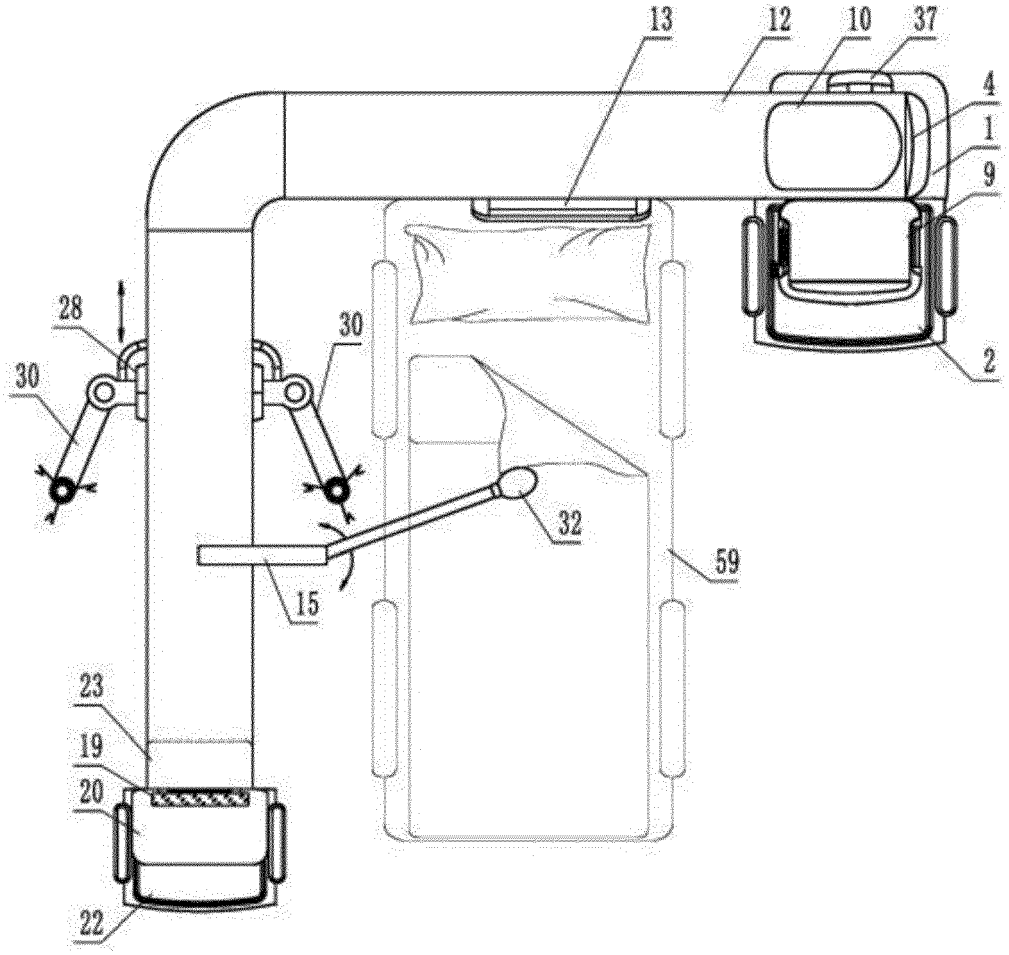


FIG. 27

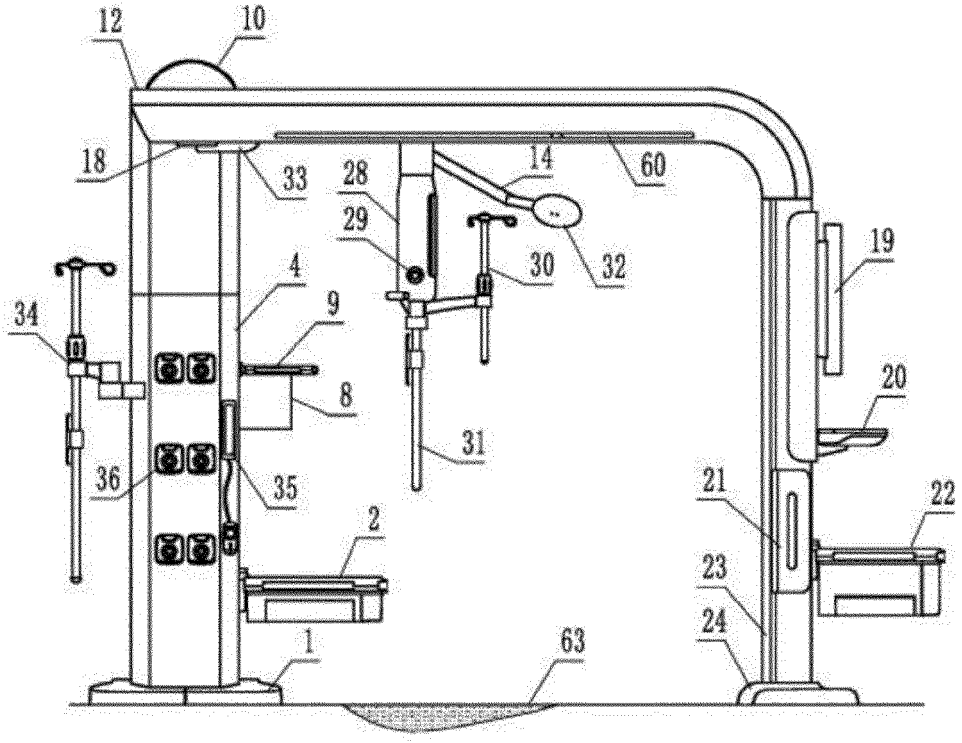
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FIG. 28

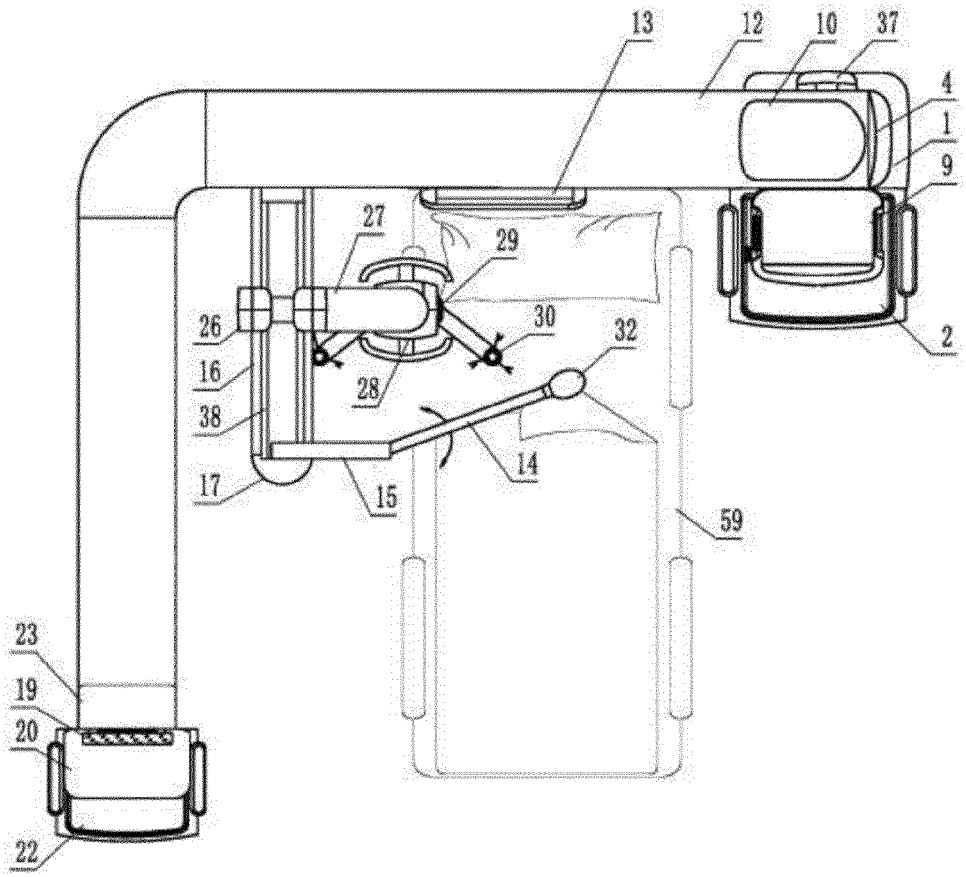
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FIG. 29

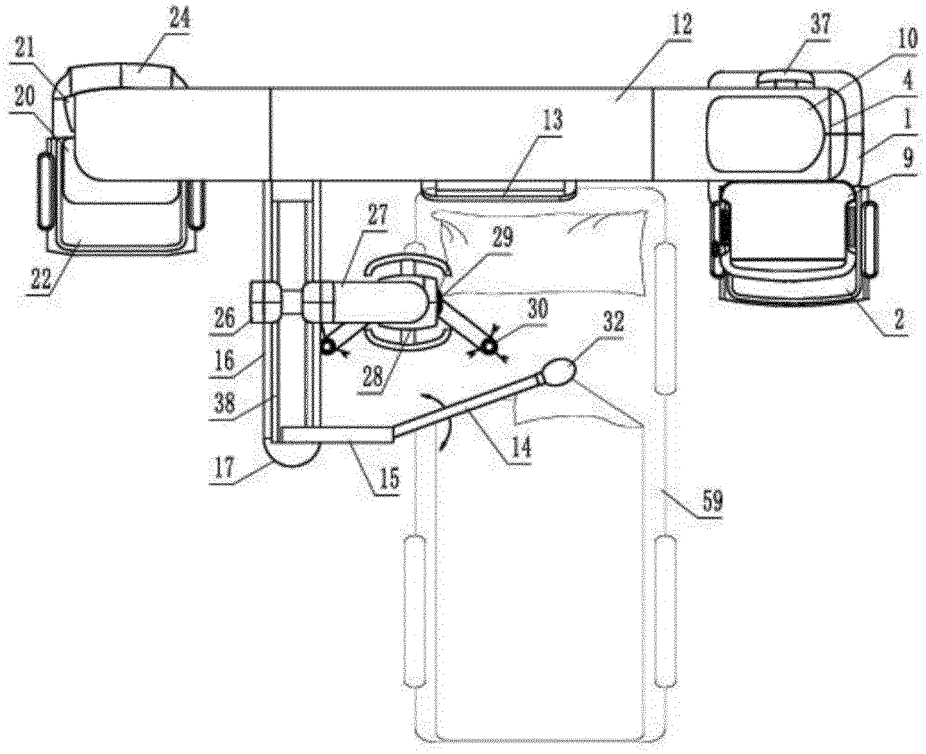


FIG. 30

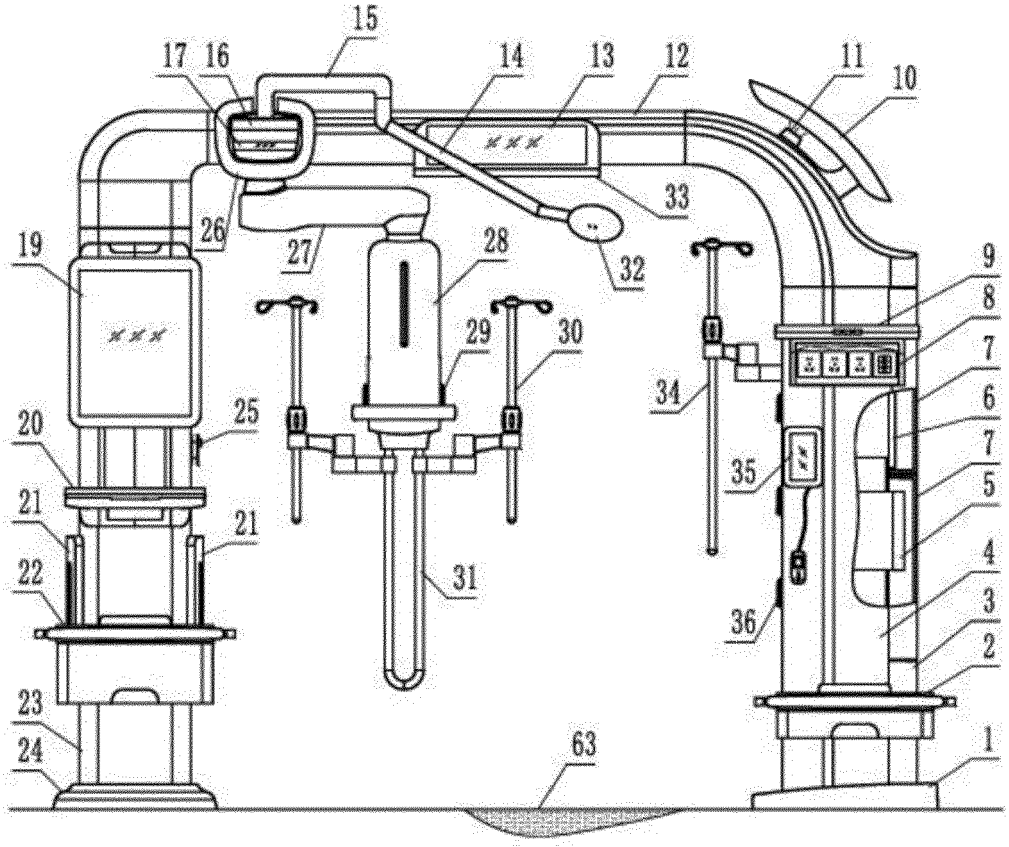
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FIG. 31

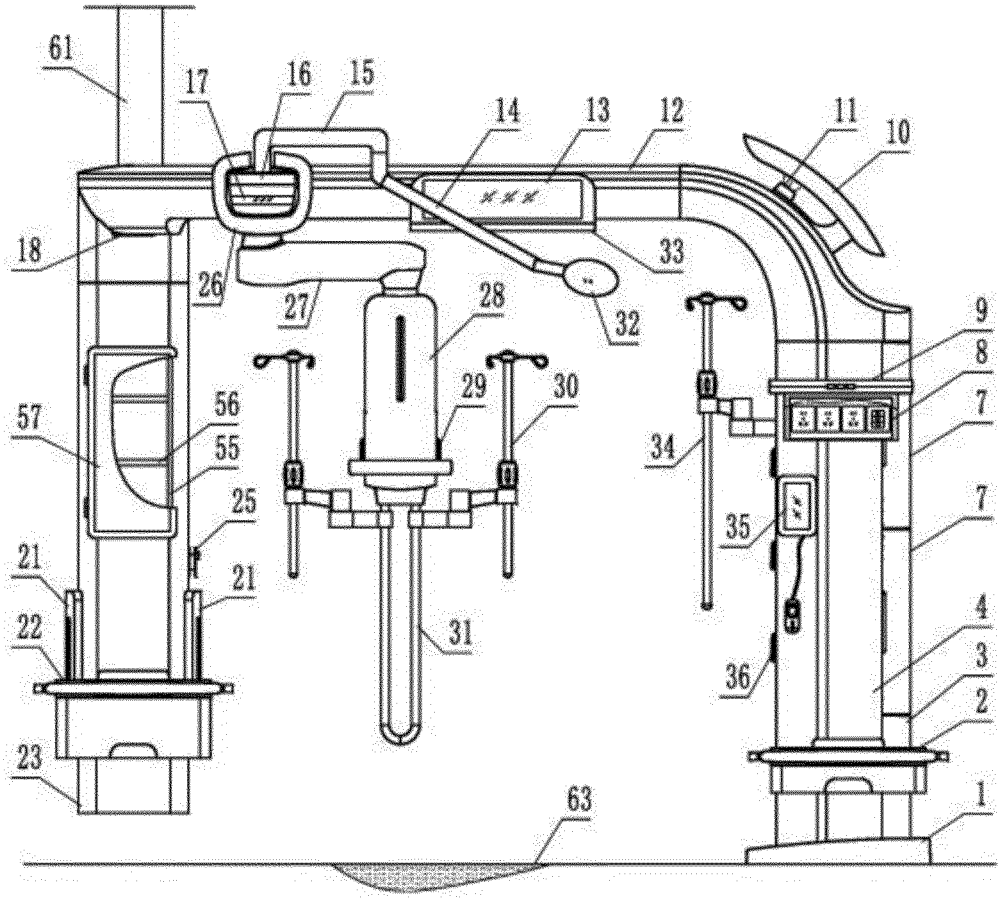
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FIG. 32

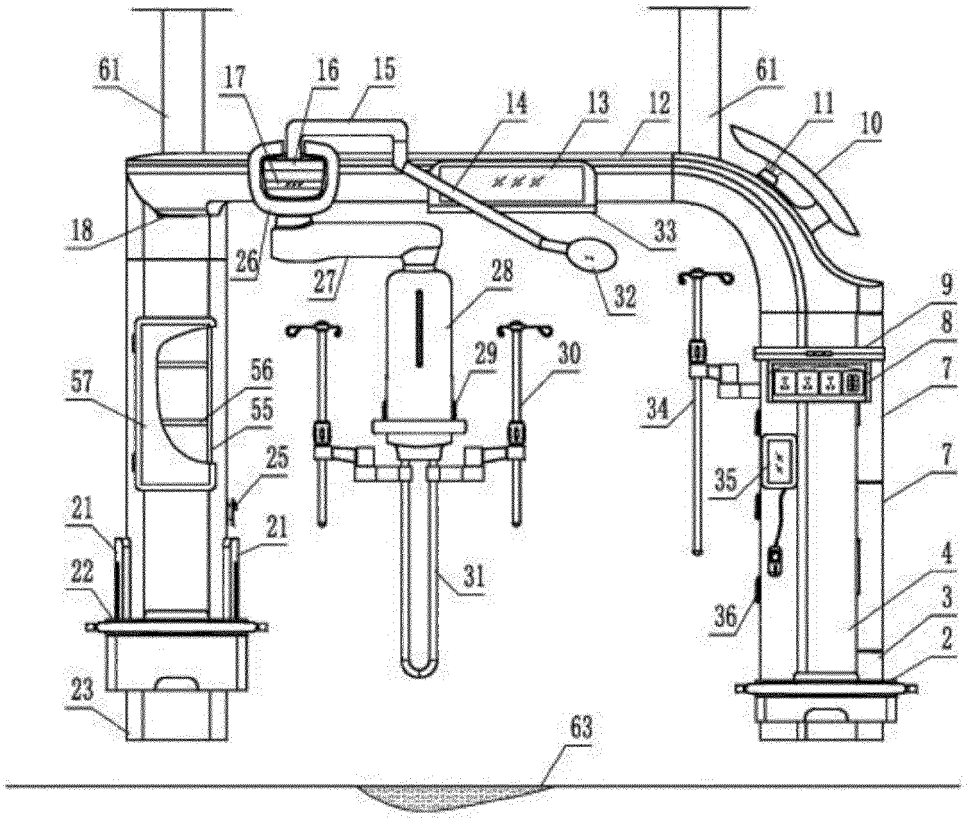
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FIG. 33

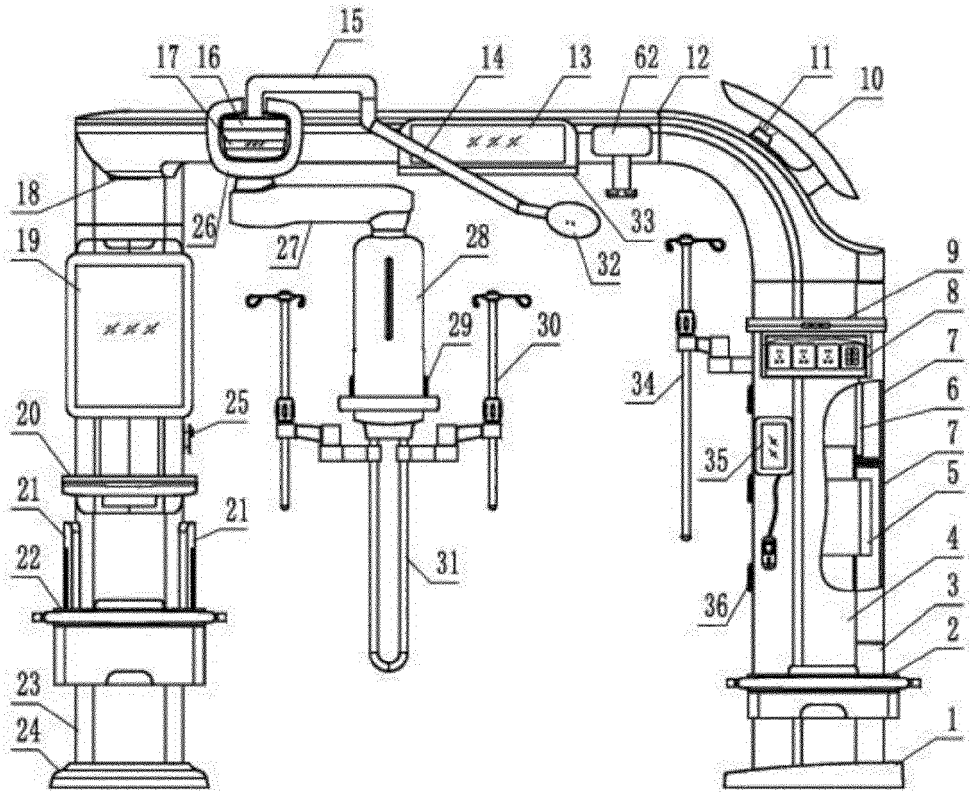
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FIG. 34

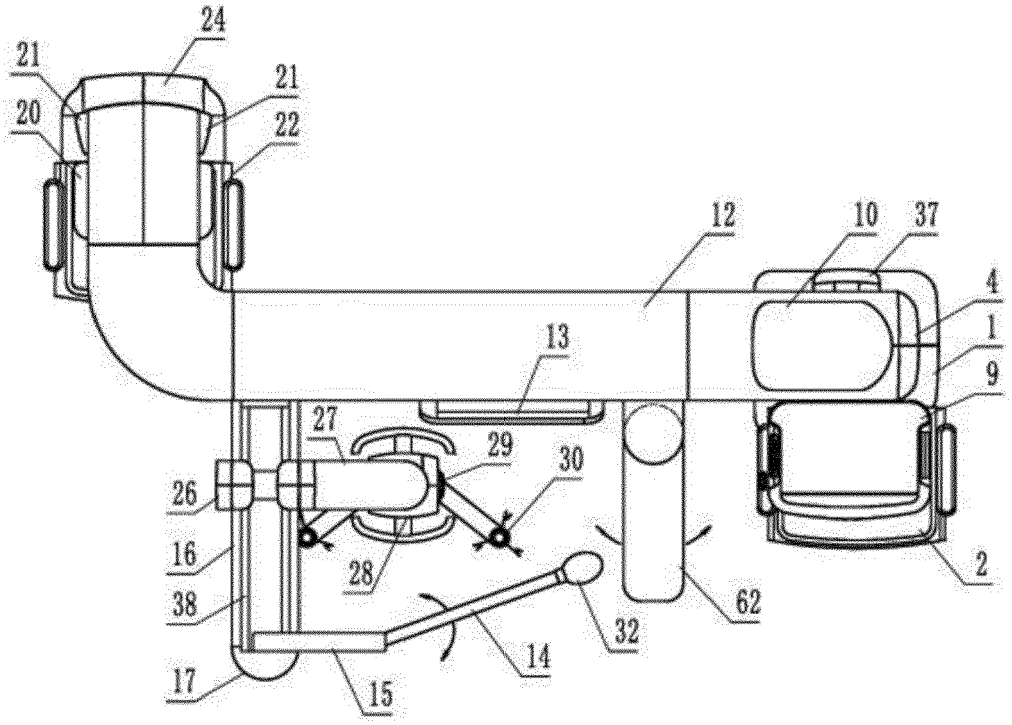


FIG. 35

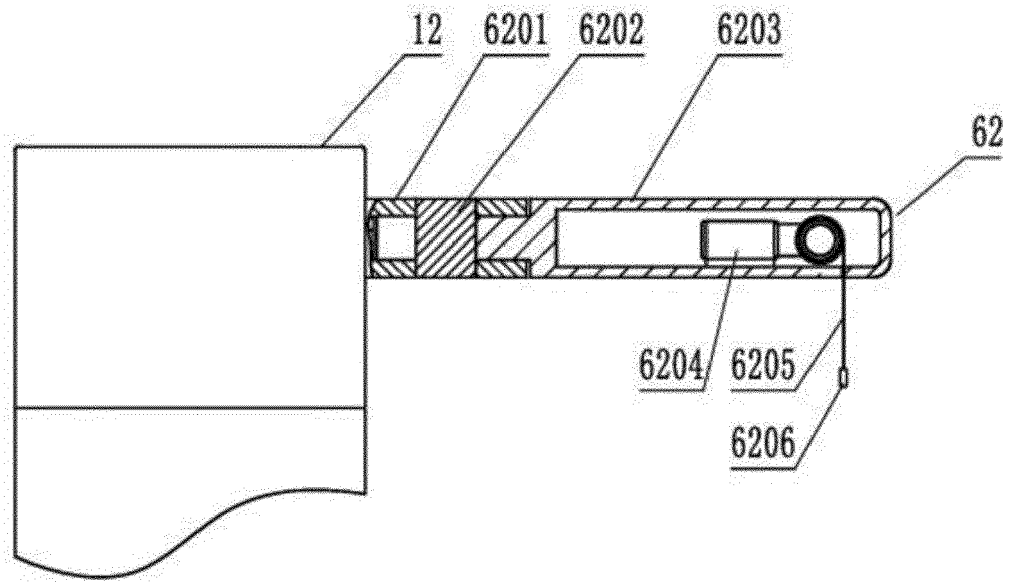


FIG. 36

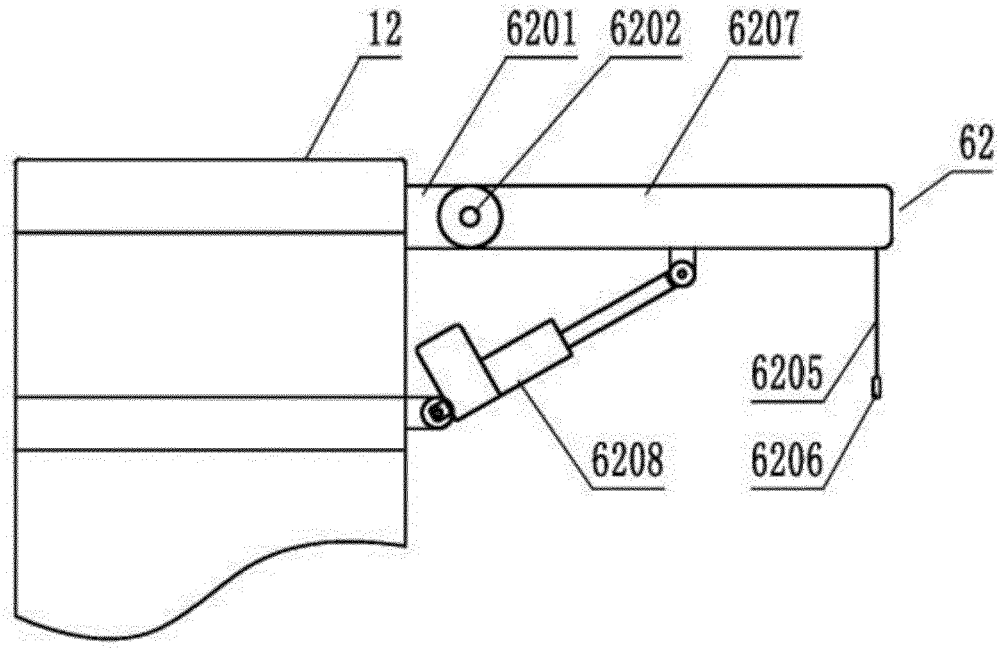
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FIG. 37

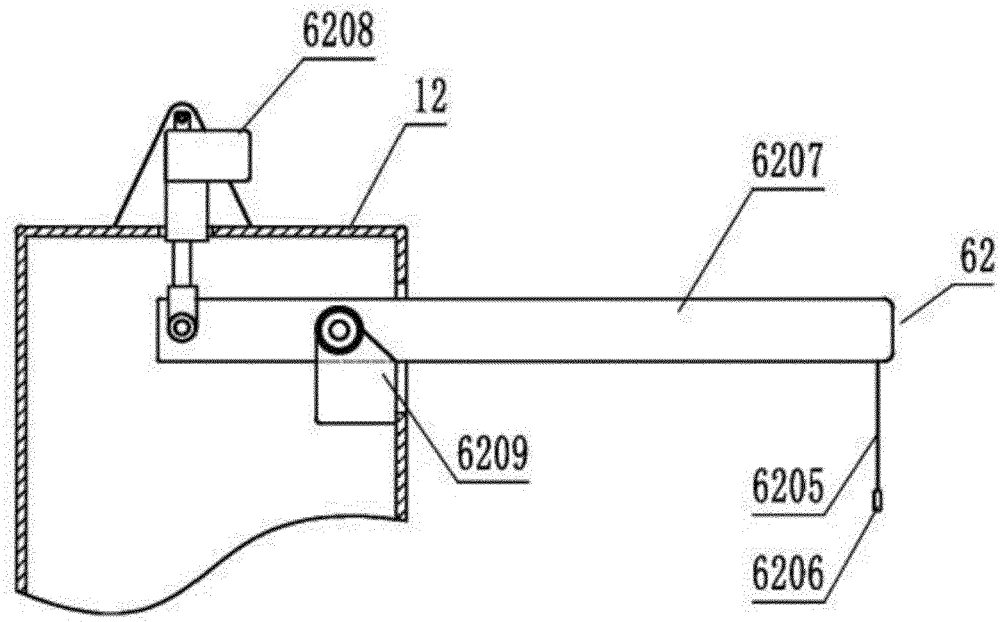
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FIG. 38

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# EUROPEAN SEARCH REPORT

Application Number
EP 20 16 1764

## DOCUMENTS CONSIDERED TO BE RELEVANT

| Category | Citation of document with indication, where appropriate, of relevant passages | Relevant to claim | CLASSIFICATION OF THE APPLICATION (IPC) |
|---|---|---|---|
| X,P | EP 3 482 733 A1 (TAIYANGLONG MEDICAL TECH CO LTD [CN]) 15 May 2019 (2019-05-15) * paragraphs [0033] - [0052], [0060]; figure 22 * | 1-28 | INV. A61G12/00 |
| A | WO 2015/062367 A1 (HUNAN TAIYANGLONG MEDICAL TECH COMPANY LTD [CN]) 7 May 2015 (2015-05-07) * the whole document * | 1-28 | |
| A | EP 2 957 272 A1 (UNIV DUNDEE [GB]) 23 December 2015 (2015-12-23) * abstract; figures * | 1 | |

TECHNICAL FIELDS SEARCHED (IPC)

A61G

The present search report has been drawn up for all claims

| Place of search | Date of completion of the search | Examiner |
|---|---|---|
| The Hague | 15 September 2020 | Kousouretas, Ioannis |

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15-09-2020

| Patent document cited in search report | Publication date | Patent family member(s) | Publication date |
|---|---|---|---|
| EP 3482733 A1 | 15-05-2019 | NONE | |
| WO 2015062367 A1 | 07-05-2015 | NONE | |
| EP 2957272 A1 | 23-12-2015 | NONE | |

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82