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Mongolian Medicine Suction Type Blood Sampler

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ABSTRACT

The invention discloses a Mongolian medicine suction type blood sampler. It comprises a collection box. The side wall of the collection box is fixedly connected with a treatment box, and the collection box is communicated with a collection part. A first partition plate and a second partition plate are fixedly connected in the treatment box. The first partition plate is positioned below the second partition plate. The first partition plate and the second partition plate divide the treatment box into a conveying cavity, a disinfection cavity and a water storage cavity from bottom to top. A conveyor belt is arranged in the conveying cavity, and the conveying cavity is communicated with the collection box through the conveyor belt. A disinfection part is arranged in the disinfection cavity. The disinfection part is communicated with the collection box and the water storage cavity is communicated with the collection part. The top end of the treatment box is provided with an operation screen. The operation screen is electrically connected with the conveyor belt and the disinfection part. According to the invention, the blood released by the Mongolian medicine bloodletting therapy can be collected, and the collected blood and the air in contact with the collected blood can be disinfected. Therefore the safety of the working environment of medical staff is improved.

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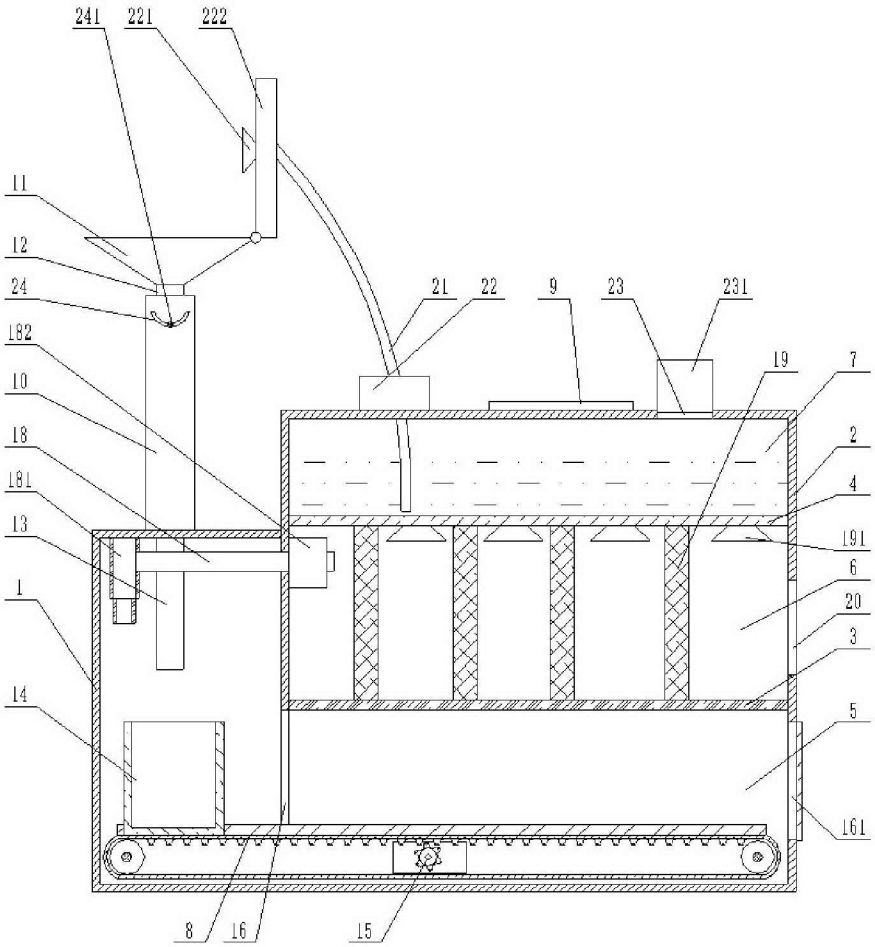

Figure 1

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Mongolian Medicine Suction Type Blood Sampler

TECHNICAL FIELD

The invention relates to the technical field of medical instruments, particularly to a Mongolian medicine suction type blood sampler.

BACKGROUND

Mongolian medicine bloodletting therapy is one of the unique traditional Mongolian medicine therapies. Mongolian medicine bloodletting therapy is a traditional therapy that uses special bloodletting instruments to bleed blood at the designated part of superficial blood vessels of human body, so as to lead out evil blood and achieve the purpose of preventing and treating diseases. Bloodletting therapy mainly aims at treating diseases by drawing out evil blood, dredging channels, improving the operation of good blood, reducing blood heat and conditioning voxels. It is used clinically for treating various diseases. it has the characteristics of simple operation, economic benefits, radical cure, high cure rate, quick response, obvious analgesic effect and disease eradication.

Mongolian medicine bloodletting therapy is effective and suitable for many diseases, so it is widely used in clinic. At present, the blood released by Mongolian bloodletting therapy is generally collected by ordinary household pots, and destroyed centrally after collection. However, the collected blood does not have any protective measures, and the hidden danger of infectious diseases caused by blood infection by medical staff during conveying is great. Meanwhile, it pollutes the medical environment. Therefore, there is an urgent need for a Mongolian medicine suction type blood sampler to improve the safety of medical staff's working environment.

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SUMMARY

The object of the present invention is to provide a Mongolian medicine suction type blood sampler to solve the problems in the prior art. The Mongolian medicine suction type blood sampler can collect the blood released by Mongolian medicine bloodletting therapy, disinfect the collected blood and the air in contact with the collected blood, and improve the working environment safety of medical staff.

In order to achieve the above object, the invention provides the following scheme. The invention provides a Mongolian medicine suction type blood sampler. It comprises a collection box. The side wall of the collection box is fixedly connected with a treatment box, and the collection box is communicated with a collection part.

A first partition plate and a second partition plate are fixedly connected in the treatment box. The first partition plate is located below the second partition plate. The first partition plate and the second partition plate divide the treatment box into a conveying cavity, a disinfection cavity and a water storage cavity from bottom to top. A conveyor belt is arranged in the conveying cavity, and the conveying cavity is communicated with the collection box through the conveyor belt. A disinfection part is arranged in the disinfection cavity and communicated with the collection box. The water storage cavity is communicated with the collection part.

The top end of the treatment box is provided with an operation screen. The operation screen is electrically connected with the conveyor belt and the disinfection part.

The collection part comprises two oppositely arranged supporting plates. The bottom ends of the two supporting plates are fixedly connected with the top end of the collection

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box. A suction head is arranged between the two supporting plates, the suction head is rotatably connected with the two supporting plates. The liquid outlet end of the suction head is communicated with a draft pipe. The draft pipe passes through the top end of the collection box and is communicated with a drain pipe, and the top end of the drain pipe is fixedly connected with the collection box. A holding cup is arranged below the drain pipe, and the bottom end of the holding cup abuts against the top end of the conveyor belt.

Preferably, a driving motor is arranged in the conveying cavity and electrically connected with the operation screen. The output shaft of the driving motor is fixedly connected with a driving gear. The driving gear is in transmission connection with the conveyor belt. The side wall of the treatment box is provided with a conveying port. The conveyor belt is communicated with the collection box through the conveying port.

Preferably, one side of the treatment box far away from the conveying port is provided with a take-out port. The conveying port is arranged corresponding to the take-out port, and a protective cover is arranged on the take-out port.

Preferably, the top end of the conveyor belt is provided with a groove. The holding cup is positioned in the groove, and the holding cup abuts against the top end of the conveyor belt through the groove.

Preferably, the disinfection part comprises a extracting-suction pipe. The disinfection cavity is communicated with the collection box through the extracting-suction pipe. The extracting-suction pipe is communicated with a suction pipe and an extracting pump. The suction pipe is located in the collection box. The extracting pump is

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positioned in the disinfection cavity and electrically connected with the operation screen. A plurality of photocatalytic nets are arranged between the first partition plate and the second partition plate. Two ends of the photocatalytic nets are respectively fixedly connected with the first partition plate and the second partition plate. The bottom end of the second partition plate is fixedly connected with a plurality of ultraviolet lamps for irradiating the photocatalytic nets. The side wall of the treatment box is provided with an air outlet which communicates the disinfection cavity with the outside.

Preferably, the water storage cavity is communicated with a water pipe. The water pipe is communicated with a water pump and a nozzle. The water pump is fixedly connected with the top end of the treatment box. The water pump is electrically connected with the operation screen, the suction head is rotatably connected with a cover plate. The nozzle is fixedly connected with the cover plate, and the water storage cavity is communicated with the suction head through the nozzle.

Preferably, the top end of the treatment box is provided with a water inlet. The water inlet is communicated with the water storage cavity, and a rubber plug is arranged in the water inlet.

Preferably, the two supporting plates are both provided with arc-shaped grooves. Sliding rods are slidably connected in the arc-shaped grooves, bolts are screwed on the two sliding rods, a ferrule is arranged between the two sliding rods. Two sliding rods are screwed with bolts. A ferrule is arranged between the two sliding rods. The two sliding rods are fixedly connected with the ferrule. The draft pipe passes through the ferrule and is fixedly connected with the ferrule.

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The invention discloses the following technical effects.

According to the Mongolian medicine suction type blood sampler provided by the invention, released blood is collected by the collection part, and the angle of the suction head can be adjusted, so that medical staff can collect blood conveniently.

The air in the collection box is extracted by the disinfection part, so that a negative pressure state is formed in the collection box. The blood collected by the suction head can quickly flow into the holding cup in the collection box, and at the same time, the extracted air passes through the disinfection cavity. The disinfection part disinfects the extracted air and discharges it to the external environment, thus improving the safety of the working environment of medical staff.

By setting the water storage cavity, the suction head after collecting blood is cleaned. Therefore the possibility of blood remaining in the suction head is reduced.

By setting the conveyor belt, the holding cup can be moved conveniently and quickly. Therefore it is convenient for taking and placing the holding cup and reduces the labor intensity of medical staff.

BRIEF DESCRIPTION OF THE FIGURES

In order to explain the embodiments of the present invention or the technical scheme in the prior art more clearly, the drawings needed in the embodiments will be briefly introduced below. Obviously, the drawings in the following description are only some embodiments of the present invention, and for ordinary technicians in the field, other drawings can be obtained according to these drawings without paying creative labor.

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Figure 1 A schematic structural diagram of Mongolian medicine suction type blood sampler

Figure 2 A structural schematic diagram of the connection relationship between the supporting plate and the draft pipe

Figure 3 A top view of the conveyor belt

Wherein, 1- collection box, 2- treatment box, 3- first partition plate, 4- second partition plate, 5- conveying cavity, 6- disinfection cavity, 7- water storage cavity, 8- conveyor belt, 9- operation screen, 10- supporting plate, 11- suction head, 12- draft pipe, 13- drain pipe, 14-holding cup, 15- driving motor, 16- conveying port, 161- take-out port, 17- groove, 18- extracting-suction pipe, 181- suction pipe, 182- extracting pump, 19- photocatalytic net, 191- ultraviolet lamp, 20- air outlet, 21- water pipe, 22- water pump, 221- nozzle, 222- cover plate, 23- water inlet, 231- rubber plug, 24- arc-shaped groove, 241- sliding rod, and 242- ferrule.

DESCRIPTION OF THE INVENTION

The technical scheme in the embodiments of the present invention will be described clearly and completely with reference to the drawings in the embodiments of the present invention. Obviously, the described embodiments are only part of the embodiments of the present invention, not all of them. Based on the embodiments of the present invention, all other embodiments obtained by ordinary technicians in the field without creative labor belong to the scope of protection of the present invention.

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In order to make the above objects, characteristics and advantages of the present invention more obvious and easy to understand, the present invention will be further explained in detail with reference to the drawings and specific embodiments.

The invention provides a Mongolian medicine suction type blood sampler. It comprises a collection box 1. The side wall of the collection box 1 is fixedly connected with a treatment box 2, and the collection box 1 is communicated with a collection part. A first partition plate 3 and a second partition plate 4 are fixedly connected inside the treatment box 2. The first partition plate 3 is located below the second partition plate 4. The first partition plate 3 and the second partition plate 4 divide the treatment box 2 into a conveying cavity 5, a disinfection cavity 6 and a water storage cavity 7 from bottom to top. A conveyor belt 8 is arranged in the conveying cavity 5. The conveying cavity 5 is communicated with the collection box 1 through the conveyor belt 8. A disinfection part is arranged in the disinfection cavity 6. The disinfection part is communicated with the collection box 1, and the water storage cavity 7 is communicated with the collection part. The top of the treatment box 2 is provided with an operation screen 9. The operation screen 9 is electrically connected with the conveyor belt 8 and the disinfection part. The collection part comprises two opposite supporting plates 10. The bottom ends of the two supporting plates 10 are fixedly connected with the top end of the collection box 1. A suction head 11 is arranged between the two supporting plates 10, and the suction head 11 is rotatably connected with the two supporting plates 10. The liquid outlet end of the suction head 11 is communicated with a draft pipe 12. The draft pipe 12 passes through the top end of the collection box 1 and is communicated with a drain pipe 13. The top end of the drain pipe 13 is fixedly connected with the collection box 1. A holding cup 14 is

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arranged below the drain pipe 13. The bottom end of the holding cup 14 abuts against the top end of the conveyor belt 8.

When it is necessary to collect blood, adjust the suction head 11 to an appropriate angle, control the operation of the disinfection part through the operation screen 9. The disinfection part exhausts air so that the inside of the collection box 1 is in a negative pressure state. The blood collected by the suction head 11 flows into the holding cup 14 through the draft pipe 12 and the drain pipe 13. The extracted air is disinfected and sterilized by the disinfection part and discharged to the external environment. After the collection is finished, the suction head 11 is cleaned by the disinfection water in the water storage cavity 7. The disinfection water flows into the holding cup 14 from the suction head 11, the draft pipe 12 and the drain pipe 13, and is taken out through the conveyor belt 8 after cleaning.

In a further optimization scheme, a driving motor 15 is arranged in the conveying cavity 5. The driving motor 15 is electrically connected with the operation screen 9. The output shaft of the driving motor 15 is fixedly connected with a driving gear. The driving gear is in transmission connection with the conveyor belt 8. The side wall of the treatment box 2 is provided with a conveying port 16. The conveyor belt 8 is communicated with the collection box 1 through the conveying port 16. The driving motor 15 provides power for the conveyor belt 8, and the reciprocating motion of the conveyor belt 8 can be realized by forward rotation and reverse rotation of the driving motor 15.

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In a further optimization scheme, the side of the treatment box 2 far away from the conveying port 16 is provided with a take-out port 161. The conveying port 16 is arranged corresponding to the take-out port 161, and the take-out port 161 is provided with a protective cover. The take-out outlet 161 is the take-out port or inlet of the holding cup 14, and the holding cup 14 enters and exits the collection box 1 through The take-out outlet 161 and the conveying port 16.

In a further optimization scheme, the top end of the conveyor belt 8 is provided with a groove 17. The holding cup 14 is located in the groove 17, and the holding cup 14 abuts against the top end of the conveyor belt 8 through the groove 17. In order to avoid the spilling of blood in the holding cup 14 caused by the movement of the holding cup 14 during conveying, the holding cup 14 is placed in the groove 17. The groove 17 restricts the movement of the holding cup 14, and reduces the possibility of spilling blood in the holding cup 14.

In a further optimization scheme, the disinfection part comprises a extracting-suction pipe 18. The disinfection cavity 6 is communicated with the collection box 1 through the extracting-suction pipe 18. The extracting-suction pipe 18 is communicated with a suction pipe 181 and an extracting pump 182. The suction pipe 181 is located in the collection box 1. The extracting pump 182 is located in the disinfection cavity 6, and the extracting pump 182 is electrically connected with the operation screen 9. A plurality of photocatalytic nets 19 are arranged between the first partition plate 3 and the second partition plate 4. Two ends of the photocatalytic nets 19 are fixedly connected with the first partition plate 3 and the second partition plate 4 respectively. A plurality of ultraviolet lamps 191 for irradiating the photocatalytic nets 19 are fixedly connected with

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the bottom end of the second partition plate 4. The side wall of the treatment box 2 is provided with an air outlet 20 for communicating the disinfection cavity 6 with the outside. The extracting pump 182 provides power to exhaust the inside of the collection box 1, so that the collection box 1 is in a negative pressure state. Since the air in contact with blood may contain viruses or bacteria, the air is discharged after disinfection. The ultraviolet lamps 191 irradiate ultraviolet rays on the photocatalytic nets 19 to oxidize and reduce the air. The generated hydroxyl radicals and ozone are used to disinfect and sterilize the air, thus improving the disinfection and sterilization effect of the air. Then the disinfected air is discharged from the air outlet 20.

In a further optimization scheme, the water storage cavity 7 is communicated with a water pipe 21. The water pipe 21 is communicated with a water pump 22 and a nozzle 221. The water pump 22 is fixedly connected with the top end of the treatment box 2, and the water pump 22 is electrically connected with the operation screen 9. A cover plate 222 is rotatably connected with the suction head 11, the nozzle 221 is fixedly connected with the cover plate 222, and the water storage cavity 7 is communicated with the suction head 11 through the nozzle 221. After blood collection is finished, cover the cover plate 222 at the inlet of the suction head 11, start the water pump 22, spray the disinfection water in the water storage cavity 7 from the spray nozzle 221, and clean the suction head 11. Whether the waste liquid generated during cleaning can be discharged into the holding cup 14 containing blood can be determined according to the actual use situation. If it is not discharged into the holding cup 14, the holding cup 14 containing blood can be taken out first and replaced with a new holding cup 14 to collect the waste liquid.

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In a further optimization scheme, the top of the treatment box 2 is provided with a water inlet 23. The water inlet 23 is communicated with the water storage cavity 7, and a rubber plug 231 is arranged in the water inlet 23. The water inlet 23 is the water inlet of the water storage cavity 7, meanwhile a rubber plug 231 is provided to prevent the disinfection water in the water storage cavity 7 from being polluted.

In a further optimization scheme, both the two supporting plates 10 are provided with arc-shaped grooves 24. Sliding rods 241 are slidably connected in the arc-shaped grooves 24. Two sliding rods 241 are screwed with bolts, and a ferrule 242 is arranged between the two sliding rods 241. The two sliding rods 241 are fixedly connected with the ferrule 242. The draft pipe 12 passes through the ferrule 242 and is fixedly connected with the ferrule 242. In order to make the suction head 11 rotate, so as to facilitate the medical staff to collect blood, the angle of the suction head 11 can be adjusted by adjusting the positions of the two sliding rods 241 in the arc-shaped grooves 24 and fixing the two sliding rods 241 by bolts. Both the draft pipe 12 and the water pipe 21 can adopt hoses, so as to facilitate the normal operation of the device.

Working principle. When the discharged blood needs to be collected, adjust the positions of the two sliding rods 241 in the arc-shaped grooves 24 and fix the two sliding rods 241 by bolts. After the angle of the suction head 11 is adjusted, the operation screen 9 controls the extracting pump 182 to work, and the gas in the collection box 1 is extracted to make the collection box 1 in a negative pressure state. The blood collected by the suction head 11 flows into the holding cup 14 through the draft pipe 12 and the drain pipe 13. The extracted air is disinfected by the photocatalytic nets 19 irradiated by the ultraviolet lamps 191 and then discharged from the air outlet 20. After the collection is

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finished, the cover plate 222 covers the inlet of the suction head 11, and the pump 22 is started under the control of the operation screen 9. The disinfection water in the water storage cavity 7 is sprayed from the spray nozzle 221 to clean the suction head 11. The waste liquid generated during cleaning is discharged into the holding cup 14. After cleaning, the driving motor 15 is started under the control of the operation screen 9. The conveyor belt 8 conveys the holding cup 14 out of The take-out outlet 161. After the holding cup 14 is taken out, the blood is disinfected. Then, a new holding cup 14 is put in, and the driving motor 15 is driven reversely, so that the holding cup 14 is placed under the drain pipe 13 again, which is convenient for the next blood collection. Among them, the electrical connection between the operation screen 9 and the driving motor 15, the extracting pump 182 and the water pump 22 belongs to the prior art, so it is not repeated here.

In the description of the present invention, it should be understood that the orientation or positional relationship indicated by the terms "longitudinal", "transverse", "upper", "lower", "front", "rear", "left", "right", "vertical", "horizontal", "top", "bottom", "inner" and "outer" is based on the orientation or positional relationship shown in the drawings. It is only for the convenience of describing the present invention, but does not indicate or imply that the referred device or element must have a specific orientation, be constructed and operated in a specific orientation. Therefore, it cannot be understood as limiting the present invention.

The above embodiments only describe the preferred mode of the invention, but do not limit the scope of the invention. On the premise of not departing from the design spirit of the invention, various modifications and improvements made by ordinary

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technicians in the field to the technical scheme of the invention shall fall within the protection scope determined by the claims of the invention.

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THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A Mongolian medicine suction type blood sampler, characterized by comprising a collection box (1), wherein a treatment box (2) is fixedly connected to the side wall of the collection box (1), and the collection box (1) is communicated with a collection part;

A first partition plate (3) and a second partition plate (4) are fixedly connected in the treatment box (2), the first partition plate (3) is located below the second partition plate (4), and the first partition plate (3) and the second partition plate (4) divide the treatment box (2) into a conveying cavity (5), a disinfection cavity (6) and a water storage cavity (7) from bottom to top; A conveying belt (8) is arranged in the conveying cavity (5); The conveying cavity (5) is communicated with the collection box (1) through the conveyor belt (8), a disinfection part is arranged in the disinfection cavity (6), the disinfection part is communicated with the collection box (1), and the water storage cavity (7) is communicated with the collection part;

The top end of the treatment box (2) is provided with an operation screen (9); The operation screen (9) is electrically connected with the conveyor belt (8) and the disinfection part;

The collection part comprises two opposite supporting plates (10), the bottom ends of the two supporting plates (10) are fixedly connected with the top end of the collection box (1), a suction head (11) is arranged between the two supporting plates (10), the suction head (11) is rotatably connected with the two supporting plates (10), and the liquid outlet end of the suction head (11) is communicated with a draft pipe (12); The liquid outlet end of the draft pipe (12) passes through the top end of the collection box (1)

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and is communicated with a drain pipe (13); The top end of the drain pipe (13) is fixedly connected with the collection box (1), a holding cup (14) is arranged below the drain pipe (13), and the bottom end of the holding cup (14) abuts against the top end of the conveyor belt (8).

2. The Mongolian medicine suction type blood sampler according to Claim 1, characterized in that a driving motor (15) is arranged in the conveying cavity (5), the driving motor (15) is electrically connected with the operation screen (9), and the output shaft of the driving motor (15) is fixedly connected with a driving gear, the driving gear is in transmission connection with the conveyor belt (8); The side wall of the treatment box (2) is provided with a conveying port (16), and the conveyor belt (8) is communicated with the collection box (1) through the conveying port (16).

3. The Mongolian medicine suction type blood sampler according to Claim 2, characterized in that the side of the treatment box (2) far away from the conveying port (16) is provided with a take-out port (161), the conveying port (16) is arranged corresponding to the take-out port (161), and the take-out port (161) is provided with a protective cover.

4. The Mongolian medicine suction type blood sampler according to Claim 2, characterized in that a groove (17) is formed at the top end of the conveyor belt (8), the holding cup (14) is located in the groove (17), and the holding cup (14) abuts against the top end of the conveyor belt (8) through the groove (17).

5. The Mongolian medicine suction type blood sampler according to Claim 1, characterized in that the disinfection part comprises a extracting-suction pipe (18), the

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disinfection cavity (6) is communicated with the collection box (1) through the extracting-suction pipe (18), the extracting-suction pipe (18) is communicated with a suction pipe (181) and an extracting pump (182); The suction pipe (181) is located in the collection box (1), the extracting pump (182) is located in the disinfection cavity (6), and the extracting pump (182) is electrically connected with the operation screen (9); A plurality of photocatalytic nets (19) are arranged between the first partition plate (3) and the second partition plate (4); two ends of the photocatalytic nets (19) are fixedly connected with the first partition plate (3) and the second partition plate (4) respectively; A plurality of ultraviolet lamps (191) for irradiating the photocatalytic nets (19) are fixedly connected to the bottom end of the second partition plate (4), and an air outlet (20) for communicating the disinfection cavity (6) with the outside is arranged on the side wall of the treatment box (2).

6. The Mongolian medicine suction type blood sampler according to Claim 1, characterized in that the water storage cavity (7) is communicated with a water pipe (21), the water pipe (21) is communicated with a water pump (22) and a nozzle (221), the water pump (22) is fixedly connected with the top end of the treatment box (2); The water pump (22) is electrically connected with the operation screen (9), the suction head (11) is rotatably connected with a cover plate (222), the nozzle (221) is fixedly connected with the cover plate (222), and the water storage cavity (7) is communicated with the suction head (11) through the nozzle (221).

7. The Mongolian medicine suction type blood sampler according to Claim 1, characterized in that the top end of the treatment box (2) is provided with a water inlet

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(23); The water inlet (23) is communicated with the water storage cavity (7), and a rubber plug (231) is arranged in the water inlet (23).

8. The Mongolian medicine suction type blood sampler according to Claim 1, characterized in that the two supporting plates (10) are both provided with arc-shaped grooves (24), and sliding rods (241) are slidably connected in the arc-shaped grooves (24), two sliding rods (241) are screwed with bolts; A ferrule (242) is arranged between the two sliding rods (241); The two sliding rods (241) are fixedly connected with the ferrule (242), and the draft pipe (12) passes through the ferrule (242) and is fixedly connected with the ferrule (242).

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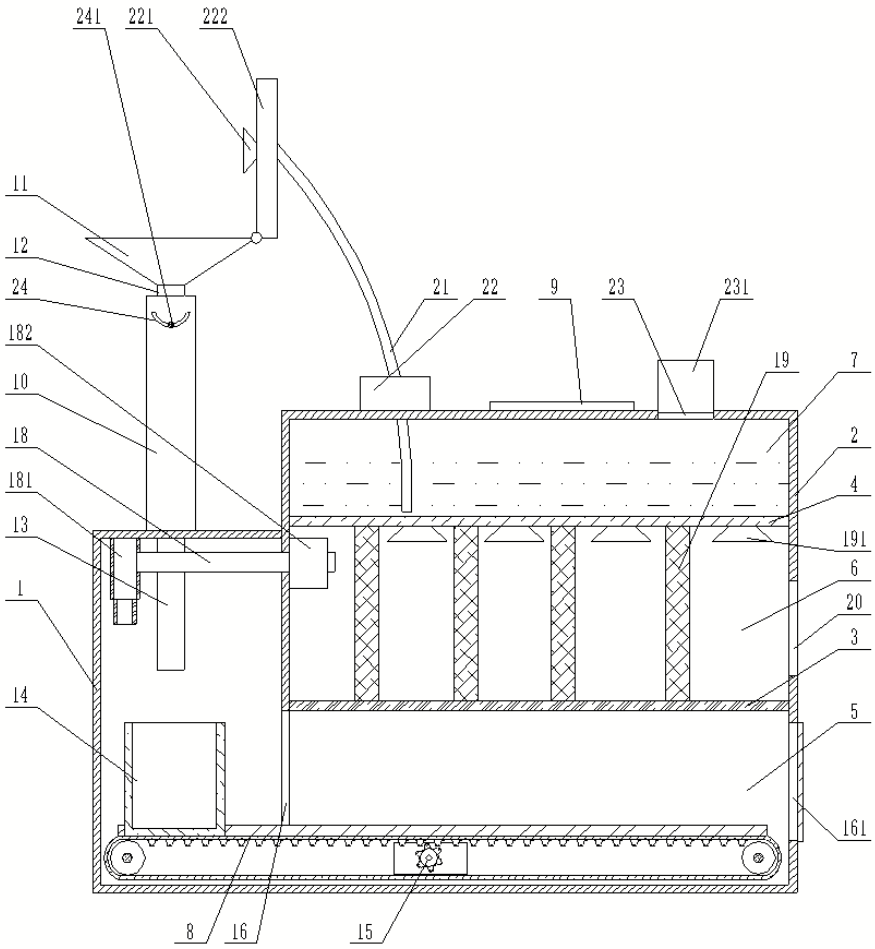

Figure 1

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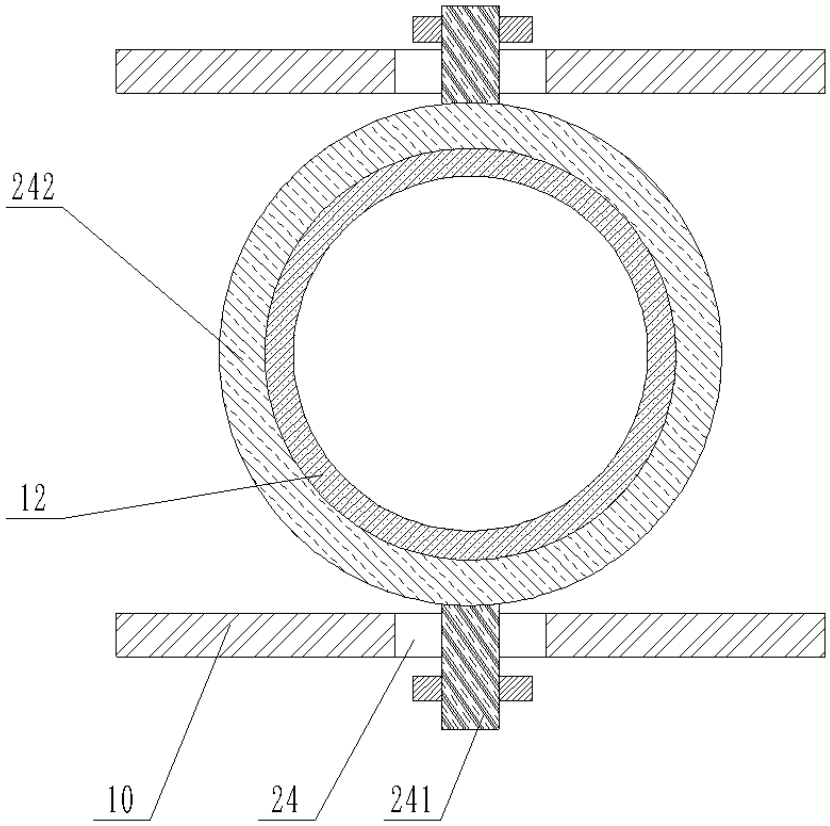

Figure 2

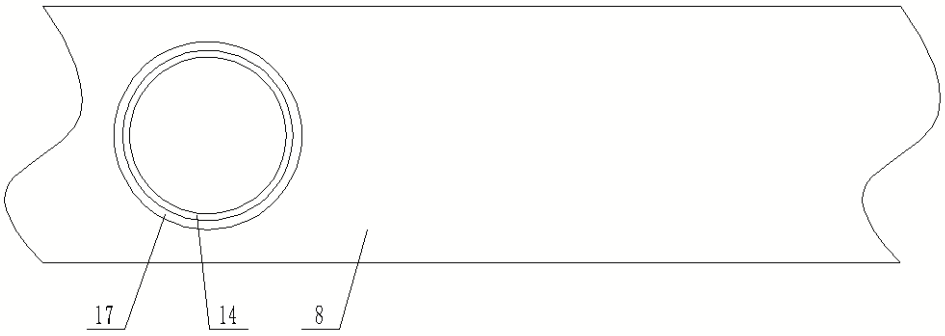

Figure 3