

An Intelligentized Soilless Vegetable Planter

Field of the Invention

The present invention relates to the field of vegetable planter, and in particular to an intelligentized household soilless vegetable planter.

Background of the Invention

At present, with the frequent occurrence of food safety accidents and the increasing seriousness of high concentration of pesticide residues, excessive level of heavy metals and the nitrite problem in green leafy vegetables, more and more people have begun to plant healthy vegetables at home, so as to meet the need for green and healthy vegetables at the family dining-tables.

For a traditional household vegetable planter, the equipment parameters of each planting layer are the same, including the same light illumination, temperature and ventilation quantity. However, during the actual use, the growth requirements for different types of vegetables are different, such that the traditional vegetable planter cannot adapt to different types of vegetables, which will affect the growth of the vegetables and need to be improved.

Summary of the Invention

In view of the deficiencies in the prior art, the present invention is intended to provide an intelligentized soilless vegetable planter, which has the effect of ensuring the growth of the vegetables.

The above-mentioned technical objective of the present invention is achieved by the following technical solution: an intelligentized household soilless vegetable planter, comprising:

- a bottom base, placed on the ground;
- a top base, located above the bottom base;
- a support rack, arranged between the bottom base and the top base;
- multi-layered trays, horizontally and uniformly arranged on the support rack;
- multi-layered illumination lamps, arranged on the top base and the lower end surfaces of the trays;

multi-layered fans, arranged on the support rack, and each located above the tray in each layer;

a control module, arranged in the top base and operable to individually control the working of the illumination lamp and the fan corresponding to the tray in each layer.

5 According to the above technical solution, when different kinds of vegetables are planted, a matched data can be selected in the control module according to the different vegetables planted on the tray in each layer, to adjust the wind speed of the fan and the light illumination of the illumination lamp corresponding to the tray in this layer, so as to meet the production requirements of the vegetables in this layer. Thus, with the configuration of the light illumination and the wind speed which are independently controlled in an individual layer, the light illumination and the wind speed can be differently adjusted as required, so as to meet the production requirements of the vegetables in different planting layers and ensure the growth of the vegetables.

10 In a preferred example of the present invention, it can be further configured that: the support rack comprises multi-layered rack bodies, and the rack body in each layer comprises:

a pair of rear pillars, vertically arranged at two vertex corner positions on a backside of the tray;

20 a pair of front pillars, vertically arranged at two vertex corner positions on a front side of the tray;

the positions where the bottom base, the top base and the tray are in contact with the rear pillar, are each provided with an insert block (34) for receiving the rear pillar (32), and the pair of front pillars (33) each has the two ends thereof provided with an insertion rod (35) used to connect with the bottom base, the top base or the tray.

25 According to the above technical solution, with the arrangement of the modularized support rack, and with the adoption of an insert-in connection method for realizing the assembly of the entire vegetable planter, a user can select or assemble the number of the layers of the tray according to actual needs, so as to meet the practicability of the vegetable planter.

30 In a preferred example of the present invention, it can be further configured that: the tray comprises:

a bracket, arranged on the support rack, and having a serpentine water channel formed therein;

a planting plate, horizontally arranged on the bracket, and having a plurality of

planting holes that communicate with the water channel;

a start section and an end section of the water channel each is located at one of the corner positions of the bracket, the planting plate is provided thereon with a water inlet that communicates with the start section of the water channel, and the bracket is provided thereon with a water outlet that communicates with the end section of the water channel;

the water inlet and the water outlet each is aligned with one of the rear pillars, the rear pillar is provided therein with a drainage pipe, the upper end of the drainage pipe communicates with the water outlet of the water channel in an upper layer, and the lower end thereof communicates with the water inlet of the water channel in a lower layer.

According to the above technical solution, when the vegetable planter works, the nutrient solution in the bottom base is pumped into the top base in the uppermost layer, and then the nutrient solution flows into the bracket in the uppermost layer along the drainage pipe. After that, the nutrient solution flows through all of the vegetables in sequence along the direction of the water channel, influxes at the water outlet position, and flows into the water channel in the lower layer through the drainage pipe. Finally, the nutrient solution influxes into the bottom base to realize the circulating supply of the nutrient solution. Therefore, by providing a circulating flow of the nutrient solution, the inventive vegetable planter can provide nutrients for all of vegetables at all times, so as to ensure the vigorous growth of the vegetables.

In a preferred example of the present invention, it can be further configured that: the bracket is provided thereon on with a noise reduction block aligned with the water inlet, and the upper end of the noise reduction block is arranged in an arched shape.

According to the above technical solution, when the nutrient solution enters the water channel, the nutrient solution first impacts the noise reduction block and flows around the noise reduction block. At this time, the noise reduction block can achieve a good noise reduction effect and reduce the noise generated when the nutrient solution enters the water channel.

In a preferred example of the present invention, it can be further configured that: the bottom wall of the water channel is inclined, and is inclined from the start section up to the end section.

According to the above technical solution, by constructing the bottom wall to be an inclined water channel, the inventive vegetable planter can achieve a good guiding

effect, so that the nutrient solution can flow stably, quickly and smoothly.

In a preferred example of the present invention, it can be further configured that: a planting frame is inserted in the planting hole, the planting frame is arranged in a hollowed-out shape, and the upper end sidewall of the planting frame is provided with
5 a catch ring that abuts against the upper end surface of the planting plate.

According to the above technical solution, with the arrangement of the inserted planting frame, the root system of the vegetables can be enveloped to get a good protection, so as to avoid damage to the root system of the vegetables, and ensure the growth of the vegetables.

10 In a preferred example of the present invention, it can be further configured that: the upper end sidewall of the planting frame is provided with at least one catch block, and the inner wall of the planting hole is provided with a catch slot into which the catch block is inserted, and the catch block is used to pass through the catch slot and abut against the lower end surface of the planting plate after rotation.

15 According to the above technical solution, by providing the planting frame with catch connection via rotation, the inventive vegetable planter achieves the fixation of the planting frame, so as to ensure the stability of the planting frame when it works.

In a preferred example of the present invention, it can be further configured that: the lower end surface of the planting plate is provided with a limit block against which
20 the end of the catch block abuts.

According to the above technical solution, with the arrangement of the limit block, the maximum rotational displacement of the planting frame is limited, and at the same time, the rapid installation and stable fixation of the planting frame can be ensured.

In a preferred example of the present invention, it can be further configured that:
25 a water tank is arranged in the bottom base, and the upper inner wall and the lower inner wall of the water tank are respectively connected with an upper rotation shaft and a lower rotation shaft for horizontal rotation; an impeller is provided on the upper rotation shaft, and the impeller is located below the water outlet on the tray in the lowermost layer; a stirring paddle is provided on the lower rotation shaft; and a linkage mechanism
30 is provided between one end of the upper rotation shaft and one end of the lower rotation shaft outside the bottom base.

According to the above technical solution, when the nutrient solution influxes into the tray in the lowest layer, the nutrient solution will flow into the water tank, at this time, the nutrient solution will impact the impeller and thus drive the impeller and the

upper rotation shaft to rotate. At the same time, with the cooperation of the linkage mechanism, the lower rotation shaft and the stirring paddle will be driven to rotate synchronously to realize real-time stirring of the nutrient solution in the water tank, and ensure the uniformity of the nutrient solution concentration, so as to ensure the normal growth of the plants.

In a preferred example of the present invention, it can be further configured that: a pair of delivery pipes with an opened lower end are provided on the sidewall of the bottom base, the delivery tubes are inserted therein with rubber tubes for delivering nutrient solution and clean water respectively, and the pair of rubber pipes each communicates with the water tank; and one end of the upper rotation shaft and one end of the lower rotation shaft outside the bottom base each is provided with a drive wheel, a plurality of drive plates are uniformly provided on the outer wall of the drive wheel, and the drive plates are used to insert into the delivery tube and squeeze the rubber tube.

According to the above technical solution, when the upper rotation shaft and the lower rotation shaft rotate, the drive wheel and the drive plates will be driven to rotate. At this time, the rubber tube in the delivery pipe can be squeezed intermittently by the drive plates, such that the nutrient solution and the water can fall into the water tank dropwise, so as to achieve real-time replenishment of the nutrient solution and the clean water, and ensure the normal growth of the plants.

To sum up, the present invention has the following beneficial effects:

1. With the configuration of the light illumination and the wind speed which are independently controlled in an individual layer, the light illumination and the wind speed can be differently adjusted as required, so as to meet the production requirements of the vegetables in different planting layers and ensure the growth of the vegetables;

2. With the arrangement of the modularized support rack, and with the adoption of an insert-in connection method for realizing the assembly of the entire vegetable planter, the number of the layers of the tray can be selected according to actual needs, so as to meet the practicability of the vegetable planter;

3. By providing a circulating flow of the nutrient solution, the inventive vegetable planter can provide nutrients for all of vegetables at all times, so as to ensure the vigorous growth of the vegetables;

4. With the arrangement of a fully automated liquid supplementation structure, the nutrient solution and the clean water can be supplemented in real time, so as to ensure the normal growth of the plants.

Brief Description of the Drawings

FIG. 1 is a structural schematic diagram according to an embodiment;

FIG. 2 is a schematic diagram of an assembly structure according to an
5 embodiment;

FIG. 3 is a structural schematic diagram of the tray according to an embodiment;

FIG. 4 is a schematic diagram of the connection relationship between the tray and
the rear pillar according to an embodiment;

FIG. 5 is a structural schematic diagram of the planting frame according to an
10 embodiment; and

FIG. 6 is a schematic diagram of the internal structure of the bottom base according
to an embodiment.

Reference numerals: 1. bottom base; 11. water tank; 12. upper rotation shaft; 13.
lower rotation shaft; 14. impeller; 15. stirring paddle; 16. delivery pipe; 17. rubber pipe;
15 18. drive wheel; 19. drive plate; 2. top base; 3. support rack; 31. rack body; 32. rear
pillar; 33. front pillar; 34. insert block; 35. insert rod; 36. drainage pipe; 4. tray; 41.
bracket; 42. planting plate; 43. water channel; 44. planting hole; 45. water inlet; 46.
water outlet; 47. noise reduction block; 48. catch slot; 49. limit block; 5. illumination
lamp; 6. fan; 7. control module; 8. planting frame; 81. catch ring; 82. catch block; 9.
20 linkage mechanism; 91. pulley; 92. belt.

Detailed Description of the Embodiments

Hereafter, the present invention will be further described in detail with reference
to the accompanying drawings.

25 As shown in FIG. 1, an intelligentized soilless vegetable planter comprises a
bottom base 1, a top base 2, a support rack 3 and multi-layered trays 4. The
intelligentized soilless vegetable planter can be used in a house, an office, a showroom,
an indoor farm, or any space in a building. The bottom base 1 is placed on the ground,
and the top base 2 is arranged horizontally and is located right above the bottom base
30 1. The support rack 3 is arranged between the bottom base 1 and the top base 2, and is
located at the four corners of the bottom base 1 and the top base 2; and the multi-layered
trays 4 are horizontally and uniformly arranged on the support rack 3 along the height
direction of the support rack 3, and are used to plant vegetables.

During the working of the vegetable planter, the vegetables are planted in the trays

4, which ensures that the user can plant vegetables and then pick and eat them at home, so as to meet the need and consumption of green and healthy vegetables at the family dining-tables.

As shown in FIGS. 1 and 2, the top base 2 and the tray 4 in each layer are provided with illumination lamps 5 on the lower end surfaces thereof for providing light illumination to the vegetables on the tray 4, so as to ensure the growth of the vegetables. One side of the support rack 3 is provided with a plurality of cross-flow fans 6 at intervals, each located above the tray 4 in each layer to ensure the ventilation of the vegetables and improve the growth of the vegetables.

As shown in FIGS. 1 and 2, a control module 7 is provided in the top base 2, and the control module 7 is used to control the working of the illumination lamps 5 and the fan 6, and during the actual working, the control module 7 can individually control the light illumination intensity of the illumination lamp 5 and the air volume of the fan 6 in each layer.

That is to say, when any one kind of vegetable is selected to be planted on the tray 4, such a vegetable can be found in the control module 7, and the control module 7 will automatically adjust the light illumination intensity of the illumination lamp 5 and the air volume of the fan 6, so as to meet the normal growth of the vegetable.

As shown in FIG. 2, the support rack 3 comprises multi-layered rack bodies 31, and the rack body 31 in each layer comprises a pair of vertically arranged rear pillars 32 and a pair of vertically arranged front pillars 33.

As shown in FIG. 2, the pair of rear pillars 32 are relatively thick and vertically arranged at the two vertex corner positions on the backside of the tray 4, and wherein the positions where the bottom base 1, the top base 2 and the tray 4 are in contact with the rear pillar 32, are each provided with an insert block 34 for inserting the rear pillar 32.

As shown in FIG. 2, the pair of front pillars 33 are relatively thin and vertically arranged at two vertex corner positions on the front side of the tray 4. The pair of front pillars 33 each has the two ends thereof provided with an insertion rod 35 used to connect with the bottom base 1, the top base 2 or the tray 4.

When the vegetable planter is assembled, the front pillar 33 and the rear pillar 32 can be fixed with the bottom base 1, the tray 4 or the top base 2 through insert-in connection fit, so as to realize the free assembly of the entire vegetable planter.

And since the vegetable planter is assembled in a layered manner, a user can

differently select the number of the layers of tray 4, and then assemble the vegetable planter. In this way, the user can select vegetable planters with different height specifications according to his own actual space, and after purchase, he can also quickly assemble them.

5 As shown in FIGS. 2 and 3, the tray 4 comprises a bracket 41 and a planting plate 42. The bracket 41 is horizontally arranged on the support rack 3 and arranged with the upper end being opened. A serpentine water channel 43 is formed inside, wherein a start section of the water channel 43 is located at a vertex corner position on the backside of the bracket 41, and an end section of the water channel 43 extends from the backside
10 position of the tray 4 up to the start section position of the water channel 43, that is to say, the start section and the end section of the water channel 43 each is located at one of the vertex corner positions on the backside of the bracket 41.

 As shown in FIGS. 2 and 3, the planting plate 42 is arranged horizontally on the bracket 41, the planting plate 42 has several planting holes 44 thereon, and the several
15 planting holes 44 are aligned and communicate with the water channel 43, to ensure that the nutrient solution flowing in the water channel 43 can exactly flow through every vegetable plant, and so as to ensure the growth of the vegetables.

 As shown in FIGS. 3 and 4, at a vertex corner position of the planting plate 42 is provided a water inlet 45 that communicates and aligns with the start section of the
20 water channel 43, and at a vertex corner position of the bracket 41 is provided a water outlet 46 that communicates and aligns with the end section of the water channel 43, and the water inlet 45 and the water outlet 46 each is aligned with one of the rear pillars 32.

 As shown in FIGS. 3 and 4, the rear pillar 32 is provided therein with a drainage
25 pipe 36, and the drainage pipe 36 is arranged in a tapered shape from top to bottom. The upper end of the drainage pipe 36 communicates with the water outlet 46 of the water channel 43 in an upper layer, and the lower end thereof communicates with the water inlet 45 of the water channel 43 in a lower layer.

 When the vegetable planter works, the nutrient solution in the bottom base 1 is
30 pumped to the top base 2 in the uppermost layer, and then the nutrient solution flows into the bracket 41 in the uppermost layer along the drainage pipe 36 in the uppermost layer. Subsequently, after the nutrient solution flows through all of the vegetables along the direction of the serpentine water channel 43, it influxes to the position of the water outlet 46, and flows into the water channel 43 in the lower layer through the drainage

pipe 36.

Followed by reciprocation, the nutrient solution will flow through all of the trays 4 and irrigate all of the vegetables. Finally, the nutrient solution influxes to the bottom base 1, to realize the circulating supply of the nutrient solution, and provide nutrients
5 for all of vegetables at all times, so as to ensure the vigorous growth of the vegetables.

As shown in FIGS. 3 and 4, the bottom wall of the bracket 41 is provided with a noise reduction block 47, the noise reduction block 47 is aligned with the water inlet 45, and the upper end of the noise reduction block 47 is arranged in an arched shape to form a guide. Therefore, when the nutrient solution flows downward along the drainage
10 pipe 36, the noise reduction block 47 will directly bear the impact of the nutrient solution, which can achieve a good noise reduction effect and reduce the sound of water flow and noise generated when the nutrient solution enters the water channel 43.

As shown in FIGS. 3 and 4, the bottom wall of the water channel 43 is inclined, and is inclined from the start section up to the end section. Therefore, when the nutrient
15 solution flows, the water channel 43 not only realizes the guidance of the nutrient solution, but also accelerates the flow of the nutrient solution, such that the nutrient solution can flow stably, quickly and smoothly.

As shown in FIGS. 3 and 5, a planting frame 8 is inserted in the planting hole 44, the planting frame 8 is arranged in a hollowed-out shape, and the planting frame 8 is
20 used for vegetable planting. The upper end sidewall of the planting frame 8 is provided with a catch ring 81, and the catch ring 81 is used to abut against the upper end surface of the planting plate 42, so as to realize the limit of the planting frame 8 in the axial direction.

As shown in FIGS. 3 and 5, the upper end sidewall of the planting frame 8 is
25 provided with a plurality of catch blocks 82, and the plurality of catch blocks 82 are uniformly distributed along the circumferential direction of the planting frame 8. The inner wall of the planting hole 44 is provided with catch slots 48 (with the same number as that of the catch blocks 82), into which the catch blocks 82 are inserted.

As shown in FIG. 3 and FIG. 5, a limit block 49 is provided on the lower end
30 surface of the planting plate 42, and the limit block 49 is used to abut against the end of the catch block 82. Therefore, after the catch block 82 passes through the catch slot 48, the catch ring 81 is controlled to rotate, and the catch block 82 now abuts against the lower end surface of the planting plate 42 until the catch block 82 abuts against the limit block 49, then the rotation is stopped, to realize the fixation of the planting frame

8.

Therefore, when the vegetables are planted, the root systems of the vegetables are put into the planting frame 8, then the planting frame 8 is inserted in the planting hole 44, and the block 82 on the planting frame 8 is aligned and passes through the catch slot 48 of the sidewall of the planting hole 44. When the catch ring 81 abuts against the upper end surface of the planting plate 42, the planting frame 8 is controlled to rotate, and the rotation is stopped until the catch block 82 abuts against the limit block 49. At this time, the catch ring 81 and the catch block 82 clamp the planting plate 42, and the fixation of the planting frame 8 is realized. The dismantling process of the planting frame 8 is on the contrary, which will not be described in detail.

As shown in FIG. 6, a water tank 11 is provided in the bottom base 1, and the upper inner wall and the lower inner wall of the water tank 11 are respectively connected with an upper rotation shaft 12 and a lower rotation shaft 13 in a horizontal rotation manner, wherein the upper rotation shaft 12 is located above the liquid level of the water tank 11, and the lower rotation shaft 13 is located below the liquid level of the water tank 11.

As shown in FIG. 6, an impeller 14 is provided at one end of the upper rotation shaft 12 within the water tank 11, and the impeller 14 is located below the water outlet 46 on the tray 4 in the lowermost layer. Therefore, when the nutrient solution influxes into the water tank 11, the impact applied on the impeller 14 will drive the upper rotation shaft 12 to rotate.

As shown in FIG. 6, a stirring paddle 15 is provided at one end of the lower rotation shaft 13 within the water tank 11, a linkage mechanism 9 is provided between one end of the upper rotation shaft 12 and one end of the lower rotation shaft 13 outside the bottom base 1, and the linkage mechanism 9 comprises a pair of pulleys 91 and a belt 92, the pair of pulleys 91 are arranged on the outer walls of the upper rotation shaft 12 and the lower rotation shaft 13, respectively, and the belt 92 is wound around the outer walls of the pair of pulleys 91.

Therefore, when the nutrient solution impacts the impeller 14 and thus drives the upper rotation shaft 12 to rotate, under the cooperation of the pulleys 91 and the belt 92, the lower rotation shaft 13 and the stirring paddle 15 will be driven to move synchronously. At this time, the stirring paddle 15 can fully stir the nutrient solution in the water tank 11 to ensure that the concentration of the delivered nutrient solution is in a balanced state, and the nutrient solution will not sink to the bottom or precipitate, thereby ensuring the vigorous growth of the vegetables.

As shown in FIG. 6, a pair of delivery pipes 16 are transversely provided on the sidewall of the bottom base 1, and the delivery pipe 16 is arranged with the lower end being opened. Each delivery tube 16 is inserted therein with a rubber tube 17, wherein one rubber tube 17 is relatively thin and is used to deliver the nutrient solution; and the
5 other rubber tube 17 is relatively thick and is used to deliver clean water. The pair of rubber pipes 17 each have one ends thereof communicates the water tank 11, and the other ends thereof connected to the supply valve positions of the nutrient solution and the clean water, respectively.

As shown in FIG. 6, the ends of the upper rotation shaft 12 and the lower rotation
10 shaft 13 outside the bottom base 1 each is provided with a drive wheel 18, the drive wheel 18 is located just below the delivery pipe 16, and the upper end of the drive wheel 18 is inserted into the delivery pipe 16. The outer wall of the drive wheel 18 is uniformly provided with a plurality of drive plates 19 for pressing the rubber tube 17, and when two adjacent drive plates 19 press the rubber tube 17, there is liquid in the rubber tube
15 17 between the adjacent drive plates 19.

Therefore, when the upper rotation shaft 12 and the lower rotation shaft 13 rotate synchronously, the pair of drive wheels 18 will be driven to rotate synchronously. At this time, the drive wheels 18 will drive the drive plates 19 to move together, and the two adjacent drive plates 19 will cooperate with each other to squeeze the rubber tube
20 17, such that the nutrient solution and the clean water can fall into the water tank 11 dropwise, to realize real-time and automatic replenishment of the nutrient solution and the clean water, so as to ensure the normal growth of the plants.

The specific embodiments are only provided for illustrating the present invention, and are not intended to limit the present invention. After reading this specification, those
25 skilled in the art can make modifications, as needed, based on the embodiments without need for inventive efforts, which can also be protected by the patent law as long as the modifications fall within the scope of the appended claims of the present invention.

CLAIMS:

1. An intelligentized soilless vegetable planter, comprising:
a bottom base (1), placed on the ground;
5 a top base (2), located above the bottom base (1);
a support rack (3), arranged between the bottom base (1) and the top base (2);
multi-layered trays (4), horizontally and uniformly arranged on the support rack
(3);
multi-layered illumination lamps (5), arranged on the lower end surfaces of the top
10 base (2) and the trays (4);
multi-layered fans (6), arranged on the support rack (3), and each located above
the tray (4) in each layer; and
a control module (7), arranged in the top base and operable to individually control
the working of the illumination lamp (5) and the fan (6) corresponding to the tray (4) in
15 each layer.

2. The intelligentized soilless vegetable planter according to claim 1, wherein the
support rack (3) comprises multi-layered rack bodies (31), and the rack body (31) in
each layer comprises:
20 a pair of rear pillars (32), vertically arranged at two vertex corner positions on the
backside of the tray (4); and
a pair of front pillars (33), vertically arranged at two vertex corner positions on the
front side of the tray (4);
the positions where the bottom base (1), the top base (2) and the tray (4) are in
25 contact with the rear pillar (32), are each provided with an insert block (34) for receiving
the rear pillar (32), and the pair of front pillars (33) each has the two ends thereof
provided with an insertion rod (35) used for connect with the bottom base (1), the top
base (2) or the tray (4).

30 3. The intelligentized soilless vegetable planter according to claim 2, wherein the
tray (4) comprises:
a bracket (41), arranged on the support rack (3), and having a serpentine water
channel (43) formed therein; and
a planting plate (42), horizontally arranged on the bracket (41), and having a

plurality of planting holes (44) that communicate with the water channel (43);

a start section and an end section of the water channel (43) each is located at one of the corner positions of the bracket (41), the planting plate (42) is provided thereon with a water inlet (45) that communicates with the start section of the water channel (43), and the bracket (41) is provided thereon with a water outlet (46) that communicates with the end section of the water channel (43);

the water inlet (45) and the water outlet (46) each is aligned with one of the rear pillars (32), the rear pillar (32) is provided therein with a drainage pipe (36), the upper end of the drainage pipe (36) communicates with the water outlet (46) of the water channel (43) in an upper layer, and the lower end thereof communicates with the water inlet (45) of the water channel (43) in a lower layer.

4. The intelligentized soilless vegetable planter according to claim 3, wherein the bracket (41) is provided thereon with a noise reduction block (47) aligned with the water inlet (45), and the upper end of the noise reduction block (47) is arranged in an arched shape.

5. The intelligentized soilless vegetable planter according to claim 3, wherein the bottom wall of the water channel (43) is inclined, and is inclined from the start section up to the end section.

6. The intelligentized soilless vegetable planter according to claim 3, further comprising a planting frame (8) inserted in the planting hole (44), the planting frame (8) is arranged in a hollowed-out shape, and the upper end sidewall of the planting frame (8) is provided with a catch ring (81) that abuts against the upper end surface of the planting plate (42).

7. The intelligentized soilless vegetable planter according to claim 6, wherein the upper end sidewall of the planting frame (8) is provided with at least one catch block (82), and the inner wall of the planting hole (44) is provided with a catch slot (48) into which the catch block (82) is inserted, and the catch block (82) is used to pass through the catch slot (48) and abut against the lower end surface of the planting plate (42) after rotation.

8. The intelligentized soilless vegetable planter according to claim 7, wherein the lower end surface of the planting plate (42) is provided with a limit block (49) against which the end of the catch block (82) abuts.

5 9. The intelligentized soilless vegetable planter according to claim 3, further comprising a water tank (11) arranged in the bottom base (1), and the upper inner wall and the lower inner wall of the water tank (11) are respectively connected with an upper rotation shaft (12) and a lower rotation shaft (13) in a horizontal rotation manner; an impeller (14) is provided on the upper rotation shaft (12), and the impeller (14) is
10 located below the water outlet (46) on the tray (4) in the lowermost layer; a stirring paddle (15) is provided on the lower rotation shaft (13); and a linkage mechanism (9) is provided between one end of the upper rotation shaft (12) and one end of the lower rotation shaft (13) outside the bottom base (1).

15 10. The intelligentized soilless vegetable planter according to claim 9, further comprising a pair of delivery pipes (16) with an opened lower end provided on the sidewall of the bottom base (1), the delivery tubes (16) are inserted therein with rubber tubes (17) for delivering nutrient solution and clean water respectively, and the pair of rubber pipes (17) each communicates with the water tank (11); and

20 one end of the upper rotation shaft (12) and one end of the lower rotation shaft (13) outside the bottom base (1) each is provided with a drive wheel (18), a plurality of drive plates (19) are uniformly provided on the outer wall of the drive wheel (18), and the drive plates (19) are used to insert into the delivery tube (16) and squeeze the rubber tube (17).

25