

ROLL COATING EXECUTION TERMINAL AND ROLL COATING ROBOT

TECHNICAL FIELD

The present application relates to a roll coating execution terminal and a roll coating robot.

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BACKGROUND

In recent years, with the continuous improvement of science and technology, to resolve the adverse effect of high labor costs that are rising year by year on the economy, all types of intelligent devices have been put into various industries in people's production and life. For example, in the construction industry, for an operation of roll coating of epoxy floor paint, roll coating robots have
10 been gradually used to replace conventional manual scraping, so as to achieve effects of improving quality, increasing efficiency, and reducing costs. When the roll coating robot is operating, an AGV trolley automatically runs to provide walking power, and a mechanical arm drives a roller to move back and forth above a construction operation surface, so as to achieve an effect of simulating manual scrape coating.

15 However, before the mechanical arm drives the roller to perform a roll coating operation, a region on the construction operation surface in which a coating is poured is usually located on a side of the roller. This blanking method leads to nonuniform distribution of the coating at different parts of the construction operation surface during roll coating. In addition, the roller cannot be always in contact with the undulating construction operation surface, resulting in poor roll coating effects and
20 low roll coating efficiency.

SUMMARY

In view of the problems, it is necessary to provide a roll coating execution terminal and a roll coating robot, aiming at resolving the problems of poor roll coating effects and low roll coating efficiency in the prior art.

25 The present application aims to provide a roll coating execution terminal, including a mounting seat; at least one telescopic floating mechanism connected to the mounting seat; and at least one group of roll coating assemblies connected to the at least one telescopic floating mechanism, where each group of roll coating assemblies is provided with at least two rollers arranged at intervals, and the rollers are configured to be in contact with a construction surface.

The roll coating execution terminal is used in a roll coating robot to perform roll coating construction on a construction operation surface. Because the at least two rollers are provided, compared with a conventional single-roller roll coating mechanism, the roll coating execution terminal has a larger contact area with the construction operation surface, completes a larger roll coating area in a unit time, and can significantly improve roll coating efficiency. In addition, because the roll coating assembly is connected to the telescopic floating mechanism, the telescopic floating mechanism can provide an active lifting and floating capability for the rollers, and then the rollers can adapt to fluctuations of the construction surface and are always in effective contact with the construction operation surface, thereby ensuring roll coating quality and efficiency.

Further, the roll coating execution terminal is provided with a group of roll coating assemblies and a plurality of telescopic floating mechanisms; the roll coating assembly includes a roll coating support, a first roller, and a second roller, where the roll coating support is connected to the plurality of telescopic floating mechanisms, and the first roller and the second roller are rotatably connected to the roll coating support; the roll coating execution terminal further includes a feeding mechanism, and the feeding mechanism is connected to the mounting seat; the feeding mechanism is provided with a discharge port, and a coating output from the discharge port falls between the first roller and the second roller.

Further, the roll coating support includes a first mounting frame, a second mounting frame, a first connecting frame, and a second connecting frame, where the first mounting frame is arranged in parallel with the second mounting frame, the first connecting frame is arranged in parallel with the second connecting frame, two ends of the first connecting frame are connected to the first mounting frame and the second mounting frame respectively, and two ends of the second connecting frame are connected to the first mounting frame and the second mounting frame respectively; the first mounting frame, the second mounting frame, the first connecting frame and the second connecting frame cooperate to form a quadrilateral structure and cooperate to enclose a blanking region, and a projection of the discharge port is located at a middle position of the blanking region; and the first roller is rotatably arranged on the first mounting frame, and the second roller is rotatably arranged on the second mounting frame.

Further, a plurality of telescopic floating mechanisms are provided, the plurality of telescopic

floating mechanisms are grouped into a first telescopic floating group and a second telescopic floating group, where the first telescopic floating group and the second telescopic floating group are connected to the mounting seat by using a base, the first telescopic floating group is connected to the first mounting frame, and the second telescopic floating group is connected to the second mounting frame.

5 Further, the roll coating support further includes a first rotating unit and a second rotating unit, the first rotating unit is arranged on the first mounting frame and rotatably connected to the first telescopic floating group, and the second rotating unit is arranged on the second mounting frame and rotatably connected to the second telescopic floating group; and a rotation axis of the first rotating unit is perpendicular to a rolling axis of the first roller, and a rotation axis of the second rotating unit
10 is perpendicular to a rolling axis of the second roller.

Further, the telescopic floating mechanism includes a guide rod, an elastic telescopic member, a linear bearing, and a telescopic sleeve, where the guide rod is connected to the mounting seat, the elastic telescopic member is sleeved on the guide rod, the linear bearing is slidably sleeved outside the guide rod and abuts against the elastic telescopic member, the telescopic sleeve is sleeved outside
15 the linear bearing, and the telescopic sleeve is connected to the roll coating assembly.

Further, the telescopic floating mechanism further includes a protective sleeve, the protective sleeve is fixedly arranged outside the guide rod, and an outer wall of the telescopic sleeve is in sliding fit with an inner wall of the protective sleeve.

Further, the feeding mechanism includes a feeding base, a mixing motor, a mixing transmission
20 assembly, and a mixing pipe, where the mixing motor and the mixing transmission assembly are arranged on the feeding base and are in driving connection, the mixing transmission assembly is in transmission connection with the mixing pipe and configured to drive the mixing pipe to rotate, the feeding base is provided with at least one feed port, the feed port communicates with the mixing pipe, and the discharge port is formed at an end of the mixing pipe away from the feeding base.

25 Further, two feed ports are provided and are a first feed port and a second feed port, and the first feed port and the second feed port communicate with the mixing pipe.

Further, the feeding mechanism further includes an end cover and a fixing pipe, the feeding base is provided with a maintenance opening, and the end cover is detachably arranged on the maintenance opening; the fixing pipe is arranged on the feeding base, and the mixing pipe is rotatably arranged in

the fixing pipe.

Further, the at least one telescopic floating mechanism includes a first telescopic floating mechanism and a second telescopic floating mechanism, where the first telescopic floating mechanism and the second telescopic floating mechanism are arranged in parallel and spaced from each other; and the at least one group of roll coating assemblies includes a first roll coating assembly, the first roll coating assembly includes a first connecting rod and two rollers, the two rollers are a first roller and a second roller, the first connecting rod is hinged to the first telescopic floating mechanism and the second telescopic floating mechanism, and the first roller and the second roller are arranged at two ends of the first connecting rod respectively.

Further, the at least one telescopic floating mechanism further includes a third telescopic floating mechanism and a fourth telescopic floating mechanism, where the third telescopic floating mechanism and the fourth telescopic floating mechanism are arranged in parallel and spaced from each other; and the at least one group of roll coating assemblies further includes a second roll coating assembly, the second roll coating assembly includes a second connecting rod and two rollers, the two rollers are a third roller and a fourth roller, the second connecting rod is hinged to the third telescopic floating mechanism and the fourth telescopic floating mechanism, and the third roller and the fourth roller are arranged at two ends of the second connecting rod respectively.

Further, the roll coating execution terminal further includes a first linkage mechanism and a second linkage mechanism, and the first telescopic floating mechanism is connected to the third telescopic floating mechanism by using the first linkage mechanism, so that the first telescopic floating mechanism and the third telescopic floating mechanism are capable of synchronously telescopically moving; and the second telescopic floating mechanism is connected to the fourth telescopic floating mechanism by using the second linkage mechanism, so that the second telescopic floating mechanism and the fourth telescopic floating mechanism are capable of synchronously telescopically moving.

Further, each telescopic floating mechanism includes a fixed body, a movable body, and an elastic telescopic body, where one end of the fixed body is connected to the mounting seat, one end of the movable body is connected to the first connecting rod or the second connecting rod, and the other end of the fixed body is connected to the other end of the movable body by using the elastic

telescopic body, so that the movable body is capable of telescopically moving relative to the fixed body.

Further, the roll coating execution terminal further includes a plurality of hinge assemblies and a plurality of torsion members, an end of each of the fixed bodies is rotatably connected to the mounting seat by using the hinge assembly, each of the torsion members is arranged on the hinge assembly, and two ends of the torsion member abut against the mounting seat and the fixed body respectively.

Further, an end of each of the movable bodies is provided with a first connecting frame and a first rotating shaft, and the first connecting frame is rotatably connected to the first connecting rod or the second connecting rod by using the first rotating shaft.

Further, end portions of both the first connecting rod and the second connecting rod are each provided with a second rotating shaft and a second connecting frame hinged to the second rotating shaft, the second connecting frame is connected to a corresponding roller among the first roller, the second roller, the third roller, and the fourth roller, an axis of the second rotating shaft is perpendicular to an axis of the first rotating shaft, and the axis of the second rotating shaft is perpendicular to a rolling axis of the corresponding roller.

Further, the roll coating execution terminal further includes a connecting plate; and the first telescopic floating mechanism, the second telescopic floating mechanism, the third telescopic floating mechanism and the fourth telescopic floating mechanism are connected to the connecting plate.

Further, the connecting plate includes a plate body and four extension bodies extending outward from the plate body, and the four extension bodies are connected to the first telescopic floating mechanism, the second telescopic floating mechanism, the third telescopic floating mechanism and the fourth telescopic floating mechanism in a one-to-one correspondence mode.

Further, the connecting plate is made of an elastic material.

Further, the connecting plate includes a first plate body, a universal joint, and a second plate body, where one end of the first plate body is rotatably connected to one end of the second plate body by using the universal joint, the other end of the first plate body is connected to the first telescopic floating mechanism and the third telescopic floating mechanism, and the other end of the second plate body is connected to the second telescopic floating mechanism and the fourth telescopic floating

mechanism.

Further, the first connecting rod has a length less than that of the second connecting rod.

Further, the roll coating execution terminal further includes a fixed support, and the fixed support is configured to position the discharge port; and the fixed support is arranged on the first connecting
5 rod.

Further, the at least one group of roll coating assemblies includes a first roll coating assembly and a second roll coating assembly; the at least one telescopic floating mechanism is configured to apply a pressure to the first roll coating assembly and the second roll coating assembly, and a pressure applied by the first roll coating assembly to the construction surface is greater than that applied by
10 the second roll coating assembly to the construction surface.

Further, the roll coating execution terminal further includes a feeding mechanism and a mounting base; the feeding mechanism is connected to the mounting seat, and a discharge port of the feeding mechanism faces the construction surface; the first roll coating assembly and the second roll coating assembly are both connected to the mounting base, the second roll coating assembly is movably
15 erected on the mounting base, and on a vertical construction surface, the second roll coating assembly is higher than the first roll coating assembly; the mounting base is provided with a first mounting portion, a supporting rotating shaft is mounted in the first mounting portion, and each of the telescopic floating mechanisms rotatably matches the mounting base by using the supporting rotating shaft; and each of the telescopic floating mechanisms is assembled with the feeding mechanism.

Further, the roll coating execution terminal is provided with two telescopic floating mechanisms, each of the telescopic floating mechanisms includes a fixed body, a movable body, and an elastic telescopic body, where the fixed body is installed with the feeding mechanism, the movable bodies of the two telescopic floating mechanisms are connected to two ends of a mounting plate respectively, and a middle portion of the mounting plate is sleeved on the supporting rotating shaft by using a wear-
25 resistant sleeve.

Further, the feeding mechanism includes a rotary joint, a mixer, and a mounting disc, where the rotary joint is connected to the mounting seat, the at least one telescopic floating mechanism is mounted on the rotary joint by using the mounting disc, the rotary joint is connected to the mixer, and a discharge port of the mixer forms the discharge port of the feeding mechanism.

Further, the first roll coating assembly includes a first roller, a second roller, a first assembly member, a second assembly member, and a first connecting rod, where the first connecting rod penetrates through the mounting base, the first assembly member is movably connected to one end of the first connecting rod, the second assembly member is movably connected to the other end of the first connecting rod, the first roller is rotatably mounted on the first assembly member, and the second roller is rotatably mounted on the second assembly member.

Further, the discharge port of the mixer is located between the first roller and the second roller; and the discharge port of the mixer corresponds to the middle of the first roller and the second roller.

Further, the first assembly member includes a first assembly plate, a first adjusting support, a second adjusting support, and a first positioning ring, where the first assembly plate is rotatably mounted at one end of the first connecting rod, the first assembly plate is fixed to the first connecting rod in a limited mode by using the first positioning ring, the first assembly plate is provided with a first sliding groove, one end of the first adjusting support is movably mounted in the first sliding groove, the other end of the first adjusting support rotatably matches one end of the first roller, one end of the second adjusting support is movably mounted in the first sliding groove, and the other end of the second adjusting support rotatably matches the other end of the first roller; and the second assembly member includes a second assembly plate, a third adjusting support, a fourth adjusting support, and a second positioning ring, where the second assembly plate is rotatably mounted at the other end of the first connecting rod, the second assembly plate is fixed to the first connecting rod in a limited mode by using the second positioning ring, the second assembly plate is provided with a second sliding groove, one end of the third adjusting support is movably mounted in the second sliding groove, the other end of the third adjusting support rotatably matches one end of the second roller, one end of the fourth adjusting support is movably mounted in the second sliding groove, and the other end of the fourth adjusting support rotatably matches the other end of the second roller.

Further, the second roll coating assembly includes a third roller, a fourth roller, a third assembly member, a fourth assembly member, a second connecting rod, a third connecting rod, a first limiting baffle, and a second limiting baffle; the mounting base is provided with a second mounting portion, the third roller is rotatably mounted on the third assembly member, the third assembly member is movably connected to one end of the second connecting rod, the other end of the second connecting

rod is rotatably connected to the second mounting portion, the first limiting baffle is mounted on the second mounting portion, the first limiting baffle abuts against the second connecting rod in a limiting mode, and the third roller is higher than the first roller when the vertical construction surface is constructed; the fourth roller is rotatably mounted on the fourth assembly member, the fourth
 5 assembly member is movably connected to one end of the third connecting rod, the other end of the third connecting rod is rotatably connected to the second mounting portion, the second limiting baffle is mounted on the second mounting portion, the second limiting baffle abuts against the third connecting rod in a limiting mode, and the fourth roller is higher than the second roller when the vertical construction surface is constructed.

10 Further, the third assembly member includes a third assembly plate, a fifth adjusting support, a sixth adjusting support, and a third positioning ring, where the third assembly plate is rotatably mounted at one end of the second connecting rod, the third assembly plate is fixed to the second connecting rod in a limited mode by using the third positioning ring, the third assembly plate is provided with a third sliding groove, one end of the fifth adjusting support is movably mounted in the
 15 third sliding groove, the other end of the fifth adjusting support rotatably matches one end of the third roller, one end of the sixth adjusting support is movably mounted in the third sliding groove, and the other end of the sixth adjusting support rotatably matches the other end of the third roller; and the fourth assembly member includes a fourth assembly plate, a seventh adjusting support, an eighth adjusting support, and a fourth positioning ring, where the fourth assembly plate is rotatably mounted
 20 at one end of the third connecting rod, the fourth assembly plate is fixed to the third connecting rod in a limited mode by using the fourth positioning ring, the fourth assembly plate is provided with a fourth sliding groove, one end of the seventh adjusting support is movably mounted in the fourth sliding groove, the other end of the seventh adjusting support rotatably matches one end of the fourth roller, one end of the eighth adjusting support is movably mounted in the fourth sliding groove, and
 25 the other end of the eighth adjusting support rotatably matches the other end of the fourth roller.

The present application provides a roll coating robot, including a walking chassis; a mechanical arm arranged on the walking chassis; and the foregoing roll coating execution terminal, where the roll coating execution terminal is arranged at a tail end of the mechanical arm away from the walking chassis.

BRIEF DESCRIPTION OF DRAWINGS

Accompanying drawings which constitute a part of the present application are intended to provide further understanding of the present application. The schematic embodiments of the present application and descriptions thereof are intended to explain the present application and do not constitute an inappropriate limitation to the present application.

FIG. 1 is a schematic diagram of a structure of a roll coating execution terminal according to Embodiment 1 of the present application;

FIG. 2 is a diagram of an assembly structure of a roll coating support, a first roller, and a second roller in FIG. 1;

FIG. 3 is a schematic diagram of a structure of a feeding mechanism in Embodiment 1 of the present application;

FIG. 4 is a schematic diagram of a structure of a telescopic floating mechanism in Embodiment 1 of the present application;

FIG. 5 is a diagram of a cross-sectional structure taken along A-A in FIG. 4;

FIG. 6 is a schematic diagram of a structure of a roll coating execution terminal according to Embodiment 2 of the present application;

FIG. 7 is a schematic diagram of a structure in FIG. 6 in another perspective;

FIG. 8 is a schematic diagram of a structure in FIG. 7 in another perspective;

FIG. 9 is a schematic diagram of a structure of telescopic floating mechanisms in FIG. 6 when the telescopic floating mechanisms synchronously extend;

FIG. 10 is a schematic diagram of a structure of telescopic floating mechanisms in FIG. 6 with different telescopic amounts;

FIG. 11 is a schematic diagram of a structure of telescopic floating mechanisms in FIG. 6 when the telescopic floating mechanisms synchronously contract;

FIG. 12 is a schematic diagram of a structure of a roll coating execution terminal according to Embodiment 3 of the present application in a first perspective;

FIG. 13 is a schematic diagram of a structure of a roll coating execution terminal according to Embodiment 3 of the present application in a second perspective;

FIG. 14 is a schematic diagram of a partial structure of a roll coating execution terminal

according to Embodiment 3 of the present application;

FIG. 15 is a schematic diagram of a structure of a roll coating execution terminal according to Embodiment 3 of the present application in a third perspective; and

FIG. 16 is a schematic diagram of a structure of a roll coating execution terminal according to Embodiment 3 of the present application in a fourth perspective.

DESCRIPTION OF EMBODIMENTS

To make the foregoing objective, features, and advantages of the present application clearer and more comprehensible, specific implementations of the present application are described in detail below with reference to the accompanying drawings. In the following description, numerous specific details are set forth to provide a full understanding of the present application. However, the present application can be implemented in many other modes different from those described herein, and a person skilled in the art can make similar improvements without departing from the connotation of the present application. Therefore, the present application is not limited by the specific embodiments disclosed below.

Embodiment 1

An embodiment of the present application provides a roll coating robot (not shown in the figure), which is used for roll coating construction on construction operation surfaces of various buildings, so as to evenly apply a coating (such as paint and putty powder) on the construction operation surface to form a decorative interface or a protective interface.

The roll coating robot may include a walking chassis, a mechanical arm, and a roll coating execution terminal. The mechanical arm is arranged on the walking chassis; and the roll coating execution terminal is arranged at a tail end of the mechanical arm away from the walking chassis. The walking chassis is configured to output walking power, so that the roll coating robot has maneuverability, thereby meeting a requirement for roll coating of a large-area construction operation surface. Optionally, the walking chassis may be, but is not limited to, a wheeled chassis, a crawler chassis, or the like, which may be specifically selected based on actual requirements.

The mechanical arm is configured to load the roll coating execution terminal 100 and provide power required for the roll coating execution terminal 100 to perform reciprocating linear movement or swing in an arc in a plane parallel to the construction operation surface, so that the roll coating

execution terminal can complete a large-area and high-quality roll coating operation. Optionally, the mechanical arm may be, but is not limited to, a two-axis mechanical arm, a four-axis mechanical arm, a six-axis mechanical arm, or the like, which may be specifically selected based on actual requirements.

FIG. 1 shows a roll coating execution terminal 100 shown in Embodiment 1 of the present application, which is used to perform a roll coating operation on a construction operation surface. Specifically, the roll coating execution terminal includes a mounting seat 101, a plurality of telescopic floating mechanisms 10, a group of roll coating assemblies, and a feeding mechanism 50, where the group of roll coating assemblies includes a roll coating support 20, a first roller 31, and a second roller 32.

Referring to FIG. 1 and FIG. 3, the telescopic floating mechanism 10 is mounted on the mounting seat 101, and the mounting seat 101 is configured to be connected to a movable apparatus, such as a mechanical arm or a sliding seat. The movable apparatus in this embodiment is configured to drive the mounting seat to move along a preset track. The roll coating support 20 is connected to the telescopic floating mechanism 10, and the roll coating support 20 encloses to form a blanking region 25. For example, in this embodiment, the roll coating support 20 forms into an annular structure, and the blanking region 25 is an inner annular cavity region of the annular structure. The first roller 31 and the second roller 32 are rotatably connected to the roll coating support 20, and the first roller 31 and the second roller 32 are arranged opposite to each other and are spaced apart by a certain distance. The feeding mechanism 50 is arranged on the mounting seat 101. The feeding mechanism 50 is provided with a discharge port 51, and a projection of the discharge port 51 is located in the blanking region 25.

In summary, the technical solutions of this embodiment have the following beneficial effects: The roll coating execution terminal in the foregoing solution is used in a roll coating robot to perform roll coating construction on a construction operation surface. Because the first roller 31 and the second roller 32 are mounted on the first roll coating support 20, compared with a conventional single-roller roll coating execution terminal, the roll coating execution terminal has a larger contact area with the construction operation surface, completes a larger roll coating area in a unit time, and can significantly improve roll coating efficiency.

In addition, because the roll coating support 20 is connected to the telescopic floating mechanism 10, the telescopic floating mechanism 10 can provide an active lifting and floating capability for the first roller 31 and the second roller 32, and then the first roller 31 and the second roller 32 can adapt to fluctuations and are always in effective contact with the construction operation surface when encountered with an uneven undulating construction operation surface, thereby ensuring roll coating quality and efficiency.

In addition, the roll coating support 20 has an annular structure and is formed with the blanking region 25, and the projection of the discharge port 51 of the feeding mechanism 50 is located in the blanking region 25, that is, a coating dripping from the discharge port 51 can be controlled in a region enclosed by the first roller 31 and the second roller 32. Therefore, when the roll coating execution terminal moves back and forth, the first roller 31 and the second roller 32 can alternately perform bidirectional roll coating operations, which not only has high roll coating efficiency, but also ensures uniform roll coating of the coating, improving dripping effects and bidirectional roll coating effects.

Referring to FIG. 1 and FIG. 2, based on the foregoing embodiment, the roll coating support 20 includes a first mounting frame 21, a second mounting frame 22, a first connecting frame 23, and a second connecting frame 24. The first roller 31 is rotatably arranged on the first mounting frame 21, and the second roller 32 is rotatably arranged on the second mounting frame 22. The first mounting frame 21 and the second mounting frame 22 are spaced roughly in parallel (roughly in parallel includes two states: parallel and approximately parallel). Two ends of the first connecting frame 23 are connected to the first mounting frame 21 and the second mounting frame 22 respectively, and two ends of the second connecting frame 24 are connected to the first mounting frame 21 and the second mounting frame 22 respectively. The first connecting frame 23 and the second connecting frame 24 are spaced roughly in parallel. The first mounting frame 21, the second mounting frame 22, the first connecting frame 23 and the second connecting frame 24 cooperate to form a parallelogram structure and cooperate to enclose a blanking region, and a projection of the discharge port 51 is located at a middle position of the blanking region. In addition, the first connecting frame 23 and the second connecting frame 24, for example, have a certain amount of elastic deformation to adapt to unevenness of the construction operation surface.

The roll coating support 20 has a parallelogram structure formed by assembling the first

mounting frame 21, the second mounting frame 22, the first connecting frame 23, and the second connecting frame 24, is simple in structure, easy to manufacture, light in weight, high in structural strength and good in stability and durability, and does not affect the service life even if stained with a coating. In addition, based on known lengths of the first mounting frame 21, the second mounting
5 frame 22, the first connecting frame 23, and the second connecting frame 24, it is easy to calculate an area of the roll coating support 20, thereby facilitating accurate calculation and control of a roll coating area.

For example, the first mounting frame 21 and the second mounting frame 22 each form into a U-shaped structure, and the first roller 31 and the second roller 32 are mounted in U-shaped cavities
10 respectively by using corresponding rolling shafts, so that a mounting mode is simple, the structure is compact, and reliability is good. In addition, the first connecting frame 23 and the second connecting frame 24 each may be a sheet metal part, which has high structural strength and is easy to obtain. The first connecting frame 23 and the second connecting frame 24 are preferably assembled with the first mounting frame 21 and the second mounting frame 22 through screwing, with a simple
15 assembly structure, convenience in assembly and disassembly, and high connection reliability.

It should be noted that, to further increase the roll coating area per unit time and improve roll coating efficiency, at least two first rollers 31 may be mounted on the first mounting frame 21, and/or at least two second rollers 32 may be mounted on the second mounting frame 22, and a specific quantity of rollers may be set based on actual requirements. To ensure roll coating quality, each first
20 roller 31 and each second roller 32 are roughly in a same plane, so as to ensure simultaneous contact with the construction operation surface.

In addition, it should be noted that arranging the projection of the discharge port 51 to the middle position of the blanking region 25 can help the coating dripping on the ground to spread more evenly, prevent the coating from splashing to the outside, improve coating utilization, and avoid polluting a
25 surrounding environment.

Referring to FIG. 1, in an embodiment, the roll coating execution terminal further includes a base 11, and a plurality of telescopic floating mechanisms 10 are connected to the mounting base 101 by using the base 11. The plurality of telescopic floating mechanisms may be grouped into two groups, which are a first telescopic floating group 12 and a second telescopic floating group 13. The first

telescopic floating group 12 and the second telescopic floating group 13 are arranged on the base 11. The first telescopic floating group 12 is connected to the first mounting frame 21, and the second telescopic floating group 13 is connected to the second mounting frame 22. In this embodiment, the first telescopic floating group 12 includes two telescopic floating mechanisms 10, and the second
5 telescopic floating group 13 includes two telescopic floating mechanisms 10.

When the construction operation surface is an outer wall of a building (such as a storied house), the outer wall has internal and external corners or a turning part, or the wall is uneven due to a manufacturing dimension error. In this case, if the first roller 31 and the second roller 32 are assembled by using a rigid structure, it cannot be ensured that the first roller 31 and the second roller
10 32 are always in contact with the construction operation surface. This affects roll coating quality and efficiency. In view of this problem, in some embodiments, the roll coating support 20 further includes a first rotating unit 14 and a second rotating unit 15, the first rotating unit 14 is arranged on the first mounting frame 21 and rotatably connected to the first telescopic floating group 12, and the second rotating unit 15 is arranged on the second mounting frame 22 and rotatably connected to the second
15 telescopic floating group 13. A rotation axis of the first rotating unit 14 is perpendicular to a rolling axis of the first roller 31, and a rotation axis of the second rotating unit 15 is perpendicular to a rolling axis of the second roller 32. For example, the first rotating unit 14 includes a hinge shaft mounted on the first mounting frame 21, the first telescopic floating group 12 is connected to the hinge shaft, the second rotating unit 15 includes another hinge shaft mounted on the second mounting frame 22, and
20 the second telescopic floating group 13 is connected to the another hinge shaft.

Because the first mounting frame 21 is rotatably connected to the first telescopic floating group 12 by using the first rotating unit 14, and the second mounting frame 22 is rotatably connected to the second telescopic floating group 13 by using the second rotating unit 15, when the first roller 31 and the second roller 32 come into contact with a construction operation surface that has varying angles or is uneven, in addition to performing adaptive telescopic floating to ensure that the first roller 31 and the second roller 32 always abut against and are in contact with the construction operation surface, the first roller 31 and the second roller 32 can adaptively rotate and swing, to meet a requirement for contact with the construction operation surface with varying angles and ensure roll coating quality and roll coating efficiency.

Referring to FIG. 4 and FIG. 5, in some embodiments, each telescopic floating mechanism 10 includes a guide rod 16, an elastic telescopic member 17, a linear bearing 18, and a telescopic sleeve 19, where the guide rod is connected to the base 11, the elastic telescopic member 17 is sleeved on the guide rod 16, the linear bearing 18 is slidably sleeved outside the guide rod 16 and abuts against the elastic telescopic member 17, and the telescopic sleeve 19 is sleeved outside the linear bearing 18. During assembly, the telescopic sleeve 19 is directly or indirectly connected to the hinge shaft of the corresponding first rotating unit 14 or second rotating unit 15 on a roller support 20.

During operation, when in contact with a construction operation surface, the first roller 31 and the second roller 32 are subjected to reverse thrust applied by the construction operation surface, the telescopic sleeve 19 drives the linear bearing 18 to contract and slide relative to the guide rod 16, and the linear bearing 18 squeezes the elastic telescopic member 17 to produce compression to implement contraction and floating of the first roller 31 and the second roller 32 when the first roller 31 and the second roller 32 are in contact with a protruding part of the construction operation surface. On the contrary, when the first roller 31 and the second roller 32 are in contact with a recessed part of the construction operation surface, because the construction operation surface no longer applies the reverse thrust, the elastic telescopic member 17 releases elastic potential energy and stretches itself to push the linear bearing 18 and the telescopic sleeve 19 to extend out, thereby achieving effects of driving the first roller 31 and the second roller 32 to extend and come into contact with the recessed part of the construction operation surface. The first telescopic floating group 12 and the second telescopic floating group 13 are simple in structure and telescopically move stably, so that the first roller 31 and the second roller 32 reliably abut against the construction operation surface.

Optionally, the elastic telescopic member 17 may be, but is not limited to, any one of a spring, an elastic column, an elastic sheet, etc., which may be selected based on actual requirements.

Further, each telescopic floating mechanism 10 further includes a protective sleeve 19a, the protective sleeve 19a is fixedly arranged outside the guide rod 16, and an outer wall of the telescopic sleeve 19 is in sliding fit with an inner wall of the protective sleeve 19a, e.g., the telescopic sleeve 19 is connected to the base 11. The protective sleeve 19a can prevent a situation that the elastic telescopic member 17 is exposed in an environment, and is contaminated with a coating, which affects elastic performance, thereby affecting a roll coating capability of the first roller 31 and the second roller 32.

In addition, because the protective sleeve 19a is sleeved outside the telescopic sleeve 19, the protective sleeve 19a can guide and limit the telescopic sleeve 19 during telescopic movement, so as to prevent a situation that the telescopic sleeve 19 drives the first roller 31 and the second roller 32 to deflect, which affects roll coating quality.

5 The roll coating execution terminal of this solution is an integrated roll coating module, specifically integrating two functions, feeding and roll coating, into one module. During operation, the feeding mechanism 50 first outputs a coating to a construction operation surface, and then the mechanical arm drives the first roller 31 and the second roller 32 to bidirectionally reciprocate to apply the coating evenly to the construction operation surface.

10 Referring to FIG. 3, for example, based on any one of the foregoing embodiments, the feeding mechanism 50 may include a feeding base 52, a mixing motor 53, a mixing transmission assembly, and a mixing pipe 54. The feeding base 52, for example, may be mounted on the base 11. The mixing motor 53 and the mixing transmission assembly are arranged on the feeding base 52 and are in driving connection, the mixing transmission assembly is in transmission connection with the mixing pipe 54
15 and configured to drive the mixing pipe 54 to rotate, the feeding base 52 is provided with at least one feed port, the feed port communicates with the mixing pipe 54, and the discharge port 51 is formed at an end of the mixing pipe 54 away from the feeding base 52.

During operation, the feeding base 52 is connected to the base 11, and then is connected to a tail end of the mechanical arm by using the mounting seat 101, to implement assembly and fixation of
20 the feeding mechanism 50. The feed port communicates with a coating supply device through a conveying pipe, and the coating supply device injects the coating into the mixing pipe 54 through a conveying pipe. Then the mixing motor 53 is started to drive the mixing transmission assembly to rotate, and the mixing transmission assembly then drives the mixing pipe 54 to rotate, to achieve an effect of evenly mixing the coating, prevent the coating from standing and agglomerating, and ensure
25 roll coating quality. The evenly mixed coating is output from the discharge port 51.

Further, two feed ports are provided and are a first feed port 521 and a second feed port 522, and the first feed port 521 and the second feed port 522 communicate with the mixing pipe 54. Therefore, the first feed port 521 and the second feed port 522 can introduce different types of coatings into the mixing pipe 54 respectively, to prepare mixed coatings of different types and performance, so as to

meet needs for construction occasions under different roll coating conditions and requirements. For example, in this embodiment, the first feed port 521 is used for a curing agent to flow in and the second feed port 522 is used for main paint to flow in, so that a mixed coating that is evenly mixed solidifies more quickly, which can shorten a coating solidification time and shorten an entire roll coating construction period.

In addition, the feeding mechanism 50 further includes an end cover 55 and a fixing pipe 56, the feeding base 52 is provided with a maintenance opening, and the end cover 55 is detachably arranged on the maintenance opening of the feeding base 52. A detachable design of the end cover 55 facilitates overhauling and maintenance, and cleaning of the inside of the feeding base 52 and a mounting component. The fixing pipe 56 is arranged on the feeding base 52, and the mixing pipe 54 is rotatably arranged in the fixing pipe 56. Therefore, the fixing pipe 56 can fix the mixing pipe 54 and ensure that the mixing pipe 54 rotates steadily.

Embodiment 2

FIG. 6 shows a roll coating execution terminal 100 shown in Embodiment 2 of the present application. The roll coating execution terminal 100 is applied, for example, to a roll coating robot, as a direct execution body for roll coating construction on a ground, for example, floor paint is subjected to roll coating onto a terrace of an underground parking lot. The roll coating execution terminal 100 includes a mounting seat 101, a plurality of telescopic floating mechanisms, and two groups of roll coating assemblies (a first group of roll coating assemblies and a second group of roll coating assemblies). Each group of roll coating assemblies includes two rollers, each group of roll coating assemblies is connected to the mounting seat 101 by using the telescopic floating mechanism, and each telescopic floating mechanism can adaptively and telescopically move.

More specifically, the plurality of telescopic floating mechanisms include a first telescopic floating mechanism 1a, a second telescopic floating mechanism 1b, a third telescopic floating mechanism 1c, and a fourth telescopic floating mechanism 1d. The first telescopic floating mechanism 1a, the second telescopic floating mechanism 1b, the third telescopic floating mechanism 1c, and the fourth telescopic floating mechanism 1d are roughly parallel and spaced apart from each other, and all the telescopic floating mechanisms 1a to 1d are connected to the mounting seat 10. As shown in the figure, these telescopic floating mechanisms 1a to 1d are roughly arranged at four

corners of a quadrilateral structure, for example.

The first group of roll coating assembly includes a first connecting rod 41 and two rollers (a first roller 31 and a second roller 32). The first connecting rod 41 is hinged to the first telescopic floating mechanism 1a and the second telescopic floating mechanism 1b, the first roller 31 and the second roller 32 are arranged at two ends of the first connecting rod 41 roughly in parallel, and rolling axes of the first roller 31 and the second roller 32 are roughly perpendicular to an axis of the first connecting rod 41. The second group of roll coating assemblies includes a second connecting rod 42 and two rollers (a third roller 33 and a fourth roller 34). The second connecting rod 42 is hinged to the third telescopic floating mechanism 1c and the fourth telescopic floating mechanism 1d, the third roller 33 and the fourth roller 34 are arranged at two ends of the second connecting rod 42 roughly in parallel, and rolling axes of the third roller 33 and the fourth roller 34 are roughly perpendicular to an axis of the second connecting rod 42.

When the roll coating execution terminal 100 is in use, the mounting seat 101 is connected to a moving unit (such as a mechanical arm) of the roll coating construction robot, so that the mechanical arm can drive the roll coating execution terminal 100 to move, so as to meet requirements for large-area ground roll coating operations. In addition, the mounting seat 101 is connected to the first telescopic floating mechanism 1a, the second telescopic floating mechanism 1b, the third telescopic floating mechanism 1c, and the fourth telescopic floating mechanism 1d. The first telescopic floating mechanism 1a and the second telescopic floating mechanism 1b are hinged to the first connecting rod 41 to form a deformable quadrilateral structure, and the third telescopic floating mechanism 1c and the fourth telescopic floating mechanism 1d are hinged to the second connecting rod 42 to also form a deformable quadrilateral structure. In this way, when the roll coating execution terminal 100 performs roll coating construction on an uneven ground, with the help of an adaptive telescopic movement capability of each telescopic floating mechanism, each roller can adaptively float up and down with the fluctuating ground, so that the roller can always cling to the ground, which not only can ensure roll coating construction efficiency, but also has good roll coating construction quality.

Refer to FIG. 9 to FIG. 11, in particular, under a telescopic action of the first telescopic floating mechanism 1a, the second telescopic floating mechanism 1b, the third telescopic floating mechanism 1c, and the fourth telescopic floating mechanism 1d, each quadrilateral structure can produce an

adaptive attitude change based on a terrain change. Based on whether the ground is flat or beveled, the first connecting rod 41 and the second connecting rod 42 each correspondingly form a horizontal or inclined attitude. When the first connecting rod 41 is in the horizontal attitude, the first telescopic floating mechanism 1a and the second telescopic floating mechanism 1b have a same telescopic amount (which may be synchronous extension or contraction). When the first connecting rod 41 is in the inclined attitude, one of the telescopic amounts of the first telescopic floating mechanism 1a and the second telescopic floating mechanism 1b is greater than the other one. A relationship between the attitude of the second connecting rod 42 and the telescopic amounts of the third telescopic floating mechanism 1c and the fourth telescopic floating mechanism 1d is not described herein again.

In this solution, the mounting seat 101 may include a connecting flange and a quick-release bolt. After being connected to a tail end of the mechanical arm, the connecting flange can be quickly and reliably fixed by the quick-release bolt. This improves assemblability of the roll coating execution terminal 100.

It can be understood that the foregoing rollers (the first roller 31 to the fourth roller 34) may be of the same structural design, so as to reduce design and manufacturing costs and improve versatility of parts. Each roller may include a roller support and a roller wheel rotatably mounted on the roller support. With the movement of the mechanical arm, the roller wheel rolls on the ground, so that a coating is subjected to uniform roll coating on the ground.

It can be understood that, to improve roll coating efficiency per unit time, two or more roller wheels may be mounted on each roller support, and a specific quantity of roller wheels may be set based on actual requirements.

In some embodiments, the first telescopic floating mechanism 1a and the second telescopic floating mechanism 1b can be arranged independently of each other, and similarly, the third telescopic floating mechanism 1c and the fourth telescopic floating mechanism 1d can be arranged independently of each other, so that the telescopic floating mechanisms can telescopically move independently of each other. When faced with some uneven ground with relatively severe fluctuations, each telescopic floating mechanism can independently extend or contract, so that the first connecting rod 41 and the second connecting rod 42 tilt to drive the rollers to be arranged at different heights, so as to adapt to the protruding ground or the recessed ground, and achieve an effect of always clinging

to the ground.

It can be understood that telescopic floating mechanisms can telescopically move independently of each other, which means that the telescopic floating mechanisms can simultaneously extend or simultaneously contract or some extend while the others contract. This is not particularly limited
5 herein.

In some embodiments, the roll coating execution terminal 100 may include a first linkage mechanism and a second linkage mechanism, and the first telescopic floating mechanism 1a may be connected to the third telescopic floating mechanism 1c by using the first linkage mechanism, so that the first telescopic floating mechanism 1a and the third telescopic floating mechanism 1c can
10 synchronously and telescopically move. For an uneven ground with relatively high flatness or relatively small fluctuations, the first telescopic floating mechanism 1a and the third telescopic floating mechanism 1c can drive, through synchronous and telescopic movement, the first roller 31 and the third roller 33 to always simultaneously cling to the ground, thereby ensuring roll coating efficiency and roll coating quality. Similarly, the second telescopic floating mechanism 1b may be
15 connected to the fourth telescopic floating mechanism 1d by using the second linkage mechanism, so that the second telescopic floating mechanism 1b and the fourth telescopic floating mechanism 1d can synchronously and telescopically move. For an uneven ground with relatively high flatness or relatively small fluctuations, the second telescopic floating mechanism 1b and the fourth telescopic floating mechanism 1d can drive, through synchronous and telescopic movement, the second roller
20 32 and the fourth roller 34 to always simultaneously cling to the ground, thereby ensuring roll coating efficiency and roll coating quality. For example, both the first linkage mechanism and the second linkage mechanism may be composed of a coupling rod and coupling heads arranged at two opposite ends of the coupling rod respectively, and the two coupling heads are connected to the first telescopic floating mechanism 1a (the second telescopic floating mechanism 1b) and the third telescopic floating
25 mechanism 1c (the fourth telescopic floating mechanism 1d) in a one-to-one correspondence mode.

In some embodiments, the roll coating execution terminal 100 may include a third linkage mechanism and a fourth linkage mechanism, and the first telescopic floating mechanism 1a is connected to the second telescopic floating mechanism 1b by using the third linkage mechanism, so that the first telescopic floating mechanism 1a and the second telescopic floating mechanism 1b can

synchronously and telescopically move. For an uneven ground with relatively high flatness or relatively small fluctuations, the first telescopic floating mechanism 1a and the second telescopic floating mechanism 1b can drive, through synchronous and telescopic movement, the first connecting rod 41 to synchronously and telescopically float in a horizontal or nearly horizontal attitude, so that the first roller 31 and the third roller 32 always simultaneously cling to the ground, thereby ensuring roll coating efficiency and roll coating quality. Similarly, the third telescopic floating mechanism 1c may be connected to the fourth telescopic floating mechanism 1d by using the fourth linkage mechanism, so that the third telescopic floating mechanism 1c and the fourth telescopic floating mechanism 1d can synchronously and telescopically move. For an uneven ground with relatively high flatness or relatively small fluctuations, the third telescopic floating mechanism 1c and the fourth telescopic floating mechanism 1d can drive, through synchronous and telescopic movement, the second connecting rod 42 to synchronously and telescopically float in a horizontal or nearly horizontal attitude, so that the third roller 33 and the fourth roller 34 always simultaneously cling to the ground, thereby ensuring roll coating efficiency and roll coating quality. For example, both the third linkage mechanism and the fourth linkage mechanism may be composed of a coupling rod and coupling heads arranged at two opposite ends of the coupling rod respectively, and the two coupling heads are connected to the first telescopic floating mechanism 1a (the third telescopic floating mechanism 1c) and the second telescopic floating mechanism 1b (the fourth telescopic floating mechanism 1d) in a one-to-one correspondence mode.

Referring to FIG. 6 and FIG. 8, in some embodiments, each telescopic floating mechanism may include a fixed body 103, a movable body 104, and an elastic telescopic body. One end of the fixed body 103 is connected to a mounting seat 101, and the mounting seat 101 is configured to be connected to a mechanical arm. One end of the movable body 104 is connected to the corresponding first connecting rod 41 or second connecting rod 42, and the other end of the fixed body 103 is connected to the other end of the movable body 104 by using the elastic telescopic body, so that the movable body 104 can telescopically move relative to the fixed body 103. During roll coating construction, facing a fluctuating ground, the elastic telescopic body can self-adaptively telescopically deform, so that the movable body 104 telescopically moves relative to the fixed body 103, thereby causing each roller to always cling to the ground with a change in ground morphology.

The telescopic floating mechanism has a simple structure and a good self-adaptive telescopic floating capability to adapt to ground fluctuations, which helps to ensure roll coating quality.

To ensure connection reliability, in this solution, the mounting seat 101 may be a rigid component, and when the roll coating assembly inclines, each telescopic floating mechanism can be slightly deformed to adapt to a change in overall structure.

In some alternative embodiments, each telescopic floating mechanism may alternatively be elastically connected to the mounting seat 101. For example, in some embodiments, the roll coating execution terminal 100 may further include a hinge assembly and a torsion member, an end of the fixed body 103 is rotatably connected to the mounting seat 101 by using the hinge assembly, the torsion member is arranged on the hinge assembly, and two ends of the torsion member abut against the mounting seat 101 and the fixed body 103 respectively. The hinge assembly keeps each telescopic floating mechanism perpendicular to the mounting seat 101 under a normal state by using the torsion member, and when subjected to a ground pressure, each telescopic floating mechanism can be inclined to a certain extent by using a rotational freedom of the hinge assembly, so that each roller can adapt to and cling to the ground.

To ensure that each telescopic floating mechanism telescopically floats more stably and reliably under an action of the ground pressure, based on the foregoing embodiment, the fixed body 103 is formed into a cylindrical shape with one end open and the other end closed, the movable body 104 is slidably arranged in a cylindrical cavity of the fixed body 103, the elastic telescopic body is arranged as a spring, and the spring abuts between a bottom wall of the cylindrical cavity of the fixed body 103 and an end of the movable body 104. The side wall of the cylindrical cavity restrains and limits the spring and limits and guides the movable body 104, so that when the spring telescopically deforms, the movable body 104 telescopically slides stably and reliably in the fixed body 103.

Referring to FIG. 6, in addition, based on any one of the foregoing embodiments, an end of each movable body 104 may be further provided with a first connecting frame 105 and a first rotating shaft 106. The first connecting frame 105 is arranged at an end of the movable body 104 away from the fixed body 103, and the first connecting frame 105 is hinged to the first connecting rod 41 or the second connecting rod 42 by using the first rotating shaft 106. When facing a ground with more complicated fluctuations, in addition to causing each group of roll coating assemblies to be inclined

by using each telescopic floating mechanism, the first rotating shaft 106 further enables each group of roll coating assemblies to have a capability of rotating and swinging within a certain angle range of a first plane, so that each roller can better adapt to a ground with fluctuating loads and ensure roll coating efficiency and quality.

5 Referring to FIG. 6 and FIG. 8, the roll coating execution terminal 100 further includes a plurality of second connecting frames 401 and a plurality of second rotating shafts 402. Two ends of both the first connecting rod 41 and the second connecting rod 42 are provided with second rotating shafts 402 respectively, and middle portions of roller supports of all rollers are hinged to corresponding second rotating shafts 402 by using corresponding second connecting frames 401
10 respectively. An axis of the second rotating shaft 402 is perpendicular to an axis of the first rotating shaft 106, so that each roller can rotate and swing in a second plane. When facing a ground with more complicated fluctuations, in addition to causing each group of roll coating assemblies to be inclined by using each telescopic floating mechanism, the second rotating shaft 402 enables each roller to have a capability of rotating and swinging within a certain range of the second plane, so that each roller
15 can better adapt to a ground with fluctuating loads and ensure roll coating efficiency and quality.

It can be understood that when the first plane is set as a plane in which an X-axis is located, the second plane may be correspondingly set as a plane in which a Y-axis is located; or when the first plane is set as the plane in which the X-axis is located, the second plane may be correspondingly set as a plane in which a Z-axis is located, and so on.

20 It should be noted that the axis of the second rotating shaft 402 is parallel to the axis of the first connecting rod 41 or the second connecting rod 42, so that the first plane and the second plane are perpendicular to each other. Alternatively, the axis of the second rotating shaft 402 is arranged non-parallel to the axis of the first connecting rod 41 or the second connecting rod 42, so that the first plane is arranged at a non-right angle with the second plane. In this way, the rollers can form more
25 different spatial attitudes, which can well adapt to an uneven ground in various complicated states, ensure that each roller effectively clings to the ground, and achieve higher roll coating efficiency and roll coating quality. This also greatly enhances usability and an applicable terrain range of the roll coating execution terminal 100.

In addition, to further improve roll coating efficiency of the roll coating execution terminal 100

per unit time, based on any one of the foregoing embodiments, the roll coating execution terminal 100 may further include a connecting plate 102, and a movable body of each telescopic floating mechanism is connected to the connecting plate 102.

It should be noted that, to improve roll coating construction efficiency, theoretically, a quantity of roll coating assemblies may be flexibly selected as required, that is, there may be three, four or more groups of roll coating assemblies. In this case, it is only required to provide an appropriate quantity of connecting plates 102 to assemble and connect the roll coating assemblies.

Preferably, the connecting plate 102 may be made of an elastic material. For example, the connecting plate 102 in this embodiment may be made of spring steel. In this case, the connecting plate 102 provides certain connection strength to ensure connection reliability of the two groups of roll coating assemblies (the first roll coating assembly and the second roll coating assembly). In addition, the connecting plate 102 further has a certain elastic deformability, so that the two groups of roll coating assemblies have different spatial attitudes, thus adapting to the fluctuating ground and ensuring that each roll coating assembly can always cling to the ground.

It should be noted that in another embodiment, the connecting plate 102 may alternatively be made of another elastic material, such as rubber, which may be selected based on actual requirements.

Refer to FIG. 6 and FIG. 7, in addition, in some embodiments, the connecting plate 102 has an X-shaped structure. Specifically, the connecting plate 102 includes a plate body and four extension bodies extending outward from the plate body. The four extension bodies are connected to the movable bodies 104 of the first telescopic floating mechanism 1a to the fourth telescopic floating mechanism 1d in a one-to-one correspondence mode. The connecting plate 102 with the X-shaped structural design has capabilities of reducing weight and providing enough connection strength and elastic deformation range, which makes the two groups of roll coating assemblies subjected to an attitude change such as inclination and twist with the fluctuating ground, thus ensuring reliability and effectiveness of clinging to the ground.

Alternatively, in an alternative solution of the foregoing embodiment, the connecting plate 102 may include a first plate body, a universal joint, and a second plate body. One end of the first plate body is rotatably connected to one end of the second plate body by using the universal joint, the other end of the first plate body is connected to the movable bodies 104 of the first telescopic floating

mechanism 1a and the third telescopic floating mechanism 1c, and the other end of the second plate body is connected to the movable bodies 104 of the second telescopic floating mechanism 1b and the fourth telescopic floating mechanism 1d. In this way, by using an omni-directional degree of freedom of the universal joint, the connecting plate 102 has capabilities of providing enough connection strength and elastic deformation range, which makes the two groups of roll coating assemblies subjected to an attitude change such as inclination and twist with the fluctuating ground, thus ensuring reliability and effectiveness of clinging to the ground. Optionally, the universal joint may be, but is not limited to, a universal coupling.

In this embodiment, a lower end of each movable body 104 and a tail end of the corresponding extension body are jointly connected to a same point on the first connecting rod 41 or the second connecting rod 42, which is more conducive to ensuring structural strength and stability.

Furthermore, the mounting seat 101 and the connecting plate 102 are vertically spaced opposite to each other, and are connected to each other by using two groups of roll coating assemblies, to form a cubic structure through enclosing. The self-adaptive telescopic capability is ensured, and the entire structure has relatively high strength, thereby preventing a situation that the roll coating quality is affected due to excessive deformation during construction.

Referring to FIG. 6 and FIG. 7, in addition, based on any one of the foregoing embodiments, the first connecting rod 41 has a length less than that of the second connecting rod 42, so that the first roller 31 and the second roller 32 are located between the third roller 33 and the fourth roller 34. In this way, higher roll coating efficiency is achieved, a structural layout is more compact, and occupied space is small, which can be suitable for requirements for roll coating in a ground region with narrow space.

The roll coating execution terminal 100 further includes a fixed support 50, and the fixed support 50 is configured to position the discharge port; and the fixed support 50 is arranged on the first connecting rod 41.

During operation, the discharge port of the feeding module can be clamped on the fixed support 50, to implement positioning and continuously drip the coating to the ground. The connecting flange is connected to the tail end of the mechanical arm by using the quick-release bolt, and moves downward for a certain distance. A spring in each telescopic floating mechanism is compressed to

make the four rollers press the ground, and the mechanical arm drives the roll coating execution terminal to reciprocate left and right, and slowly move forward (the first roller 31 and the second roller 32 are in front, and the third roller 33 and the fourth roller 34 are behind), to perform roll coating construction. The coating flows out from the discharge port to the ground, and between the first roller 31 and the second roller 32. The coating is first preliminarily rolled evenly by the first roller 31 and the second roller 32, and then fully rolled evenly by the third roller 33 and the fourth roller 34, so that the overall construction efficiency and construction quality are greatly improved.

Further, the first roller 31 and the second roller 32 of the first roll coating assembly partially overlap the third roller 33 and the fourth roller 34 of the second roll coating assembly. This can prevent a situation that a roll coating vacuum zone is formed due to the existence of a gap between two groups of roll coating assemblies, so that the gap cannot be effectively subjected to roll coating construction, which affects roll coating quality.

Embodiment 3

Referring to FIG. 12 to FIG. 14, in an embodiment, the roll coating execution terminal includes a first roll coating assembly, a second roll coating assembly, and two telescopic floating mechanisms 10. Each roller of the first roll coating assembly and the second roll coating assembly is configured to be in roll coating contact with the construction surface, and the telescopic floating mechanism 10 is configured to apply a pressure to the first roll coating assembly and the second roll coating assembly. The pressure applied by each roller of the first roll coating assembly to the construction surface is greater than that applied by each roller of the second roll coating assembly to the construction surface.

When the roll coating execution terminal is in use, each roller of the first roll coating assembly evenly roll-coats the coating on the construction surface, and the pressure applied by the first roll coating assembly to the construction surface can be adjusted by the telescopic floating mechanism 10, so that the roller of the first roll coating assembly can more effectively apply the coating to cracks in the construction surface. In addition, considering that a side portion of the first roll coating assembly is prone to coating accumulation when the first roll coating assembly performs roll coating, the pressure applied by the second roll coating assembly to the construction surface is greater than that applied by the first roll coating assembly to the construction surface, so that the second roll coating assembly is allowed to flatten the accumulated coating part that is generated on the

construction surface after the first roll coating assembly performs roll coating. Therefore, the roll coating execution terminal can spread most of the coating evenly on the construction surface by using the first roll coating assembly, and the accumulated coating part after roll coating by the first roll coating assembly is flattened and repaired by the second roll coating assembly, thereby preventing missed coating or rolling marks on the construction surface.

As shown in FIG. 12 and FIG. 14, in an embodiment, the roll coating execution terminal further includes a mounting base 7 and a feeding mechanism 50. The feeding mechanism 50 is assembled with each telescopic floating mechanism 10, for example. The feeding mechanism 50 is connected to the mounting seat 101, and the mounting seat 101 is configured to be connected to the mechanical arm. A discharge port of the feeding mechanism 50 faces the construction surface. The first roll coating assembly and the second roll coating assembly are both connected to the mounting base 7, the second roll coating assembly is movably erected on the mounting base 7, and on a vertical construction surface, the second roll coating assembly is higher than the first roll coating assembly. The mounting base 7 is provided with a first mounting portion 71, a supporting rotating shaft (not shown in the figure) is mounted in the first mounting portion 71, and each of the telescopic floating mechanisms 10 rotatably matches the mounting base 7 by using the supporting rotating shaft.

Specifically, a first mounting portion 71 may be a groove or a mounting opening provided in the mounting base 7. Each telescopic floating mechanism 10 may be a spring or an elastic cylinder. Further, after the roll coating execution terminal is connected to the roll coating robot, a pressure applied by the telescopic floating mechanism 10 to the mounting base 7 can be changed by compressing or pulling back the telescopic floating mechanism 10. In addition, considering that an uneven region appears on the construction surface during the roll coating movement of the roll coating execution terminal, the telescopic floating mechanism 10 movably matches the mounting base 7 by using a supporting rotating shaft, so that the mounting base 7 can be correspondingly inclined when passing through the uneven region, and the first roll coating assembly and the second roll coating assembly are synchronously inclined with the mounting base 7, thereby ensuring roll coating effects of the roller of the first roll coating assembly and the roller of the second roll coating assembly on the construction surface. Furthermore, the provision of the first mounting portion 71 on the mounting base 7 can make relative rotation between the telescopic floating mechanism 10 and the mounting

base 7 more stable.

The roll coating execution terminal is connected and fixed to the roll coating robot, and the required coating is loaded into the feeding mechanism 50. The first roll coating assembly and the second roll coating assembly are mounted on the mounting base 7. When a roll coating operation is performed, the roller of the first roll coating assembly first abuts against the construction surface, and then the coating in the feeding mechanism 50 is sprinkled on the construction surface through the discharge port. In this case, the roll coating robot drives the roll coating execution terminal to move, and the first roll coating assembly evenly roll-coats the coating on the construction surface. The pressure applied to the mounting base 7 can be adjusted by the telescopic floating mechanism 10, to change the pressure applied by the roller of the first roll coating assembly to the construction surface, so that the first roll coating assembly can more effectively apply the coating to the cracks in the construction surface. In addition, considering that a side portion of the first roll coating assembly is prone to coating accumulation when the first roll coating assembly performs roll coating, a height difference is provided between the first roll coating assembly and the second roll coating assembly on the construction surface, that is, on the vertical construction surface, the roller of the second roll coating assembly is higher than the roller of the first roll coating assembly, and the pressure applied by the roller of the second roll coating assembly to the construction surface is greater than that applied by the roller of the first roll coating assembly to the construction surface, so that the second roll coating assembly can flatten the accumulated coating part that is generated on the construction surface after the first roll coating assembly performs roll coating.

Referring to FIG. 12 to FIG. 14, in an embodiment, each telescopic floating mechanism 10 may include a fixed body 103, a movable body 104, and an elastic telescopic body. One end of each fixed body 103 may be connected to the feeding mechanism 50, and the other end of each fixed body 103 is in sliding fit with one end of the movable body 104. The elastic telescopic body may be arranged between the fixed body 103 and the movable body 104, so that the movable body 104 can elastically extend or retract. The other end of each movable body 104 is connected to two ends of a mounting plate 113, and a middle portion of the mounting plate 113 is sleeved on the supporting rotating shaft by using a wear-resistant sleeve 114. The movable bodies 104 of the telescopic floating mechanisms 10 are integrated by the mounting plate 113, so that each telescopic floating mechanism 10 transmits

a force to the mounting base 7 more effectively. Furthermore, the mounting plate 113 is sleeved on the supporting rotating shaft by using the wear-resistant sleeve 114, which can reduce a friction loss between the mounting plate 113 and the supporting rotating shaft.

As shown in FIG. 13 and FIG. 14, in an embodiment, the feeding mechanism 50 may include a rotary joint 57, a mixer 58, and a mounting disc 59. The mounting seat 101 is mounted on the rotary joint 57, and the telescopic floating mechanism 10 is connected to the rotary joint 57, for example, by using the mounting disc 59; the rotary joint 57 is connected to the mixer 58, and a discharge port 581 of the mixer 58 forms the discharge port of the feeding structure 50. Specifically, based on an actual situation, sometimes paint needs to be mixed. For example, the rotary joint 57 is provided with a curing agent feed port and a main paint feed port, then the paint is mixed by the mixer 58, and finally the mixed paint is led out from the discharge port 581 of the mixer 58. In addition, it is often required to convey the paint through a material pipe, and winding of the material pipe can be effectively prevented through rotation of the rotary joint 57.

As shown in FIG. 12, FIG. 13, FIG. 15, and FIG. 16, in an embodiment, the first roll coating assembly includes a first roller 31, a second roller 32, a first assembly member 310, a second assembly member 320, and a first connecting rod 61, where the first connecting rod 61 penetrates through the mounting base 7, the first assembly member 310 is hinged to one end of the first connecting rod 61, the second assembly member 320 is hinged to the other end of the first connecting rod 61, the first roller 31 is rotatably mounted on the first assembly member 310, and the second roller 32 is rotatably mounted on the second assembly member 320. Specifically, the first assembly member 310 and the second assembly member 320 are plates or rods. The first connecting rod 61 can fix the first roller 31 and the second roller 32 to two corresponding sides of the mounting base 7. In addition, the first assembly 310 enables the first roller 31 to be fixed to the first connecting rod 61 more conveniently, and the second assembly member 320 enables the second roller 32 to be fixed to the first connecting rod 61 more conveniently. Furthermore, in this embodiment, the first assembly member 310 is movably connected to the first connecting rod 61, so that the first roller 31 can obtain rotational freedom, and the first roller 31 has axial freedom (in an axial direction of the first connecting rod 61). The second assembly member 320 is movably connected to the second connecting rod 62, so that the second roller 32 can obtain rotational freedom, and the mounting base 7 has axial freedom (in the

axial direction of the first connecting rod 61). This foregoing implementation can effectively improve roll coating effects of the first roll coating assembly.

In an embodiment, the discharge port 581 of the mixer 58 is located between the first roller 31 and the second roller 32, and the discharge port 581 of the mixer 58 corresponds to the middle of the first roller 31 and the second roller 32. Specifically, this foregoing implementation enables the first roll coating assembly to be in fuller contact with the coating, and the roll coating is more uniform.

Referring to FIG. 12, in an embodiment, the first assembly member 310 includes a first assembly plate 313, a first adjusting support 311, a second adjusting support 312, and a first positioning ring, where the first assembly plate 313 is rotatably mounted at one end of the first connecting rod 61, the first assembly plate 313 is fixed to the first connecting rod 61 in a limited mode by using the first positioning ring, the first assembly plate 313 is provided with a first sliding groove 314, one end of the first adjusting support 311 is movably mounted in the first sliding groove 314, the other end of the first adjusting support 311 rotatably matches one end of the first roller 31, one end of the second adjusting support 312 is movably mounted in the first sliding groove 314, and the other end of the second adjusting support 312 rotatably matches the other end of the first roller 31. The second assembly member 320 includes a second assembly plate 323, a third adjusting support 321, a fourth adjusting support 322, and a second positioning ring, where the second assembly plate 323 is rotatably mounted at the other end of the first connecting rod 61, the second assembly plate 323 is fixed to the first connecting rod 61 in a limited mode by using the second positioning ring, the second assembly plate 323 is provided with a second sliding groove 324, one end of the third adjusting support 321 is movably mounted in the second sliding groove 324, the other end of the third adjusting support 321 rotatably matches one end of the second roller 32, one end of the fourth adjusting support 322 is movably mounted in the second sliding groove 324, and the other end of the fourth adjusting support 322 rotatably matches the other end of the second roller 32.

Specifically, the first adjusting support 311 and the second adjusting support 312 slide in the first sliding groove 314, so that a distance between the first adjusting support 311 and the second adjusting support 312 can be changed, which better facilitates effective mounting of the first roller 31. The third adjusting support 321 and the fourth adjusting support 322 slide in the second sliding groove 324, so that a distance between the third adjusting support 321 and the fourth adjusting support 322 can be

changed, which better facilitates effective mounting of the second roller 32.

Referring to FIG. 12, FIG. 13, FIG. 15, and FIG. 16, in an embodiment, the second roll coating assembly includes a third roller 33, a fourth roller 34, a third assembly member 330, a fourth assembly member 340, a second connecting rod 62, a third connecting rod 63, a first limiting baffle 73, and a second limiting baffle 74. The mounting base 7 is provided with a second mounting portion 72, and the third roller 33 is rotatably mounted on the third assembly member 330. The third assembly member 330 is hinged to one end of the second connecting rod 62, and the other end of the second connecting rod 62 is rotatably connected to the second mounting portion 72. The first limiting baffle 73 is mounted on the second mounting portion 72, and the first limiting baffle 73 abuts against the second connecting rod 62 in a limiting mode. When the vertical construction surface is constructed, the third roller 33 is higher than the first roller 31. The fourth roller 34 is rotatably mounted on the fourth assembly member 340. The fourth assembly member 340 is hinged to one end of the third connecting rod 63, and the other end of the third connecting rod 63 is rotatably connected to the second mounting portion 72. The second limiting baffle 74 is mounted on the second mounting portion 72, and the second limiting baffle 74 abuts against the third connecting rod 63 in a limiting mode. When the vertical construction surface is constructed, the fourth roller 34 is higher than the second roller 32.

Specifically, the third assembly member 330 and the fourth assembly member 340 are plates or rods. The third assembly member 330 is movably connected to the second connecting rod 62, so that the third roller 33 can obtain rotational freedom, and the third roller 33 has axial freedom (in an axial direction of the second connecting rod 62). The fourth assembly member 340 is movably connected to the third connecting rod 63, so that the fourth roller 34 can obtain rotational freedom, and the fourth roller 34 has axial freedom (in an axial direction of the third connecting rod 63). This foregoing implementation can effectively improve roll coating effects of the second roll coating assembly. Further, when the third roller 33 is fixed by the second connecting rod 62, the third roller 33 can rely on its own gravity to face the construction surface, and when the fourth roller 34 is fixed by the third connecting rod 63, the fourth roller 34 can rely on its own gravity to face the construction surface. This is only one of the implementations. To effectively fix the third roller 33 and the fourth roller 34 relative to the construction surface, a torsion spring may be further added at a joint of the second

connecting rod 62 and the second mounting portion 72, and a torsion spring may be further added at a joint of the third connecting rod 63 and the second mounting portion 72. Through the adding of the first limiting baffle 73 and the second limiting baffle 74 to the second mounting portion 72, the third roller 33 may be higher than the first roller 31 on the vertical construction surface, and the fourth roller 34 may be higher than the second roller 32 on the vertical construction surface. Furthermore, both the second connecting rod 62 and the third connecting rod 63 are provided with bent parts. After the second connecting rod 62 is connected to the mounting base 7, the bent part of the second connecting rod 62 can bypass the first roller 31, thereby preventing movement of the second connecting rod 62 from affecting the first roller 31. After the third connecting rod 63 is connected to the mounting base 7, the bent part of the third connecting rod 63 can bypass the second roller 32, thereby preventing movement of the third connecting rod 63 from affecting the second roller 32.

As shown in FIG. 12, in an embodiment, the first assembly member 330 includes a third assembly plate 333, a fifth adjusting support 331, a sixth adjusting support 332, and a third positioning ring, where the third assembly plate 333 is rotatably mounted at one end of the second connecting rod 62, the third assembly plate 333 is fixed to the second connecting rod 62 in a limited mode by using the third positioning ring, the third assembly plate 333 is provided with a third sliding groove 234, one end of the fifth adjusting support 331 is movably mounted in the third sliding groove 234, the other end of the fifth adjusting support 331 rotatably matches one end of the third roller 33, one end of the sixth adjusting support 332 is movably mounted in the third sliding groove 234, and the other end of the sixth adjusting support 332 rotatably matches the other end of the third roller 33. The fourth assembly member 340 includes a fourth assembly plate 343, a seventh adjusting support 341, an eighth adjusting support 342, and a fourth positioning ring, where the fourth assembly plate 343 is rotatably mounted at one end of the third connecting rod 63, the fourth assembly plate 343 is fixed to the third connecting rod 63 in a limited mode by using the fourth positioning ring, the fourth assembly plate 343 is provided with a fourth sliding groove 344, one end of the seventh adjusting support 341 is movably mounted in the fourth sliding groove 344, the other end of the seventh adjusting support 341 rotatably matches one end of the fourth roller 34, one end of the eighth adjusting support 342 is movably mounted in the fourth sliding groove 344, and the other end of the eighth adjusting support 342 rotatably matches the other end of the fourth roller 34.

Specifically, the fifth adjusting support 331 and the sixth adjusting support 332 slide in the third sliding groove 234, so that a distance between the fifth adjusting support 331 and the sixth adjusting support 332 can be changed, which better facilitates effective mounting of the third roller 33. The seventh adjusting support 341 and the eighth adjusting support 342 slide in the fourth sliding groove 344, so that a distance between the seventh adjusting support 341 and the eighth adjusting support 342 can be changed, which better facilitates effective mounting of the fourth roller 34.

As described above, in an embodiment, a roll coating robot is further provided, and includes the roll coating execution terminal according to any one of the above. When the foregoing roll coating robot is in use, the mechanical arm drives the roll coating execution terminal to move. The foregoing roll coating execution terminal can spread most of the coating evenly on the construction surface by using the first roll coating assembly, and the accumulated coating part is flattened and repaired by the second roll coating assembly, thereby preventing missed coating or rolling marks on the construction surface.

In an embodiment, when the roll coating robot performs a roll coating operation, the roll coating robot can drive the roll coating execution terminal to swing back and forth left and right quickly, and move downward slowly to form a continuous Z-shaped path, so that roll coating construction of a rectangular construction surface can be completed.

The technical features of the foregoing embodiments can be arbitrarily combined. To make the description concise, none of all possible combinations of the technical features in the foregoing embodiments are described. However, as long as no contradiction occurs between the combinations of these technical features, the combinations should be considered as falling within the scope of this specification.

The foregoing embodiments only express several implementations of the present application, and descriptions thereof are relatively specific and detailed, but the embodiments should not be construed as limiting the patent scope of the present application. It should be noted that for a person of ordinary skill in the art, several modifications and improvements can be further made without departing from the conception of the present application, and shall fall within the protection scope of the present application. Therefore, the protection scope of the present application shall be subject to the claims.

CLAIMS

1. A roll coating execution terminal, comprising a mounting seat; at least one telescopic floating mechanism connected to the mounting seat; and at least one group of roll coating assemblies connected to the at least one telescopic floating mechanism, wherein each group of roll coating assemblies is provided with at least two rollers arranged at intervals, and the rollers are configured to be in contact with a construction surface.

2. The roll coating execution terminal according to claim 1, wherein

the roll coating execution terminal is provided with a group of roll coating assemblies and a plurality of telescopic floating mechanisms; the roll coating assembly comprises a roll coating support, a first roller, and a second roller, wherein the roll coating support is connected to the plurality of telescopic floating mechanisms, and the first roller and the second roller are rotatably connected to the roll coating support; and

the roll coating execution terminal further comprises a feeding mechanism, and the feeding mechanism is connected to the mounting seat; the feeding mechanism is provided with a discharge port, and a coating output from the discharge port falls between the first roller and the second roller.

3. The roll coating execution terminal according to claim 2, wherein

the roll coating support comprises a first mounting frame, a second mounting frame, a first connecting frame, and a second connecting frame, wherein the first mounting frame is arranged in parallel with the second mounting frame, the first connecting frame is arranged in parallel with the second connecting frame, two ends of the first connecting frame are connected to the first mounting frame and the second mounting frame respectively, and two ends of the second connecting frame are connected to the first mounting frame and the second mounting frame respectively; the first mounting frame, the second mounting frame, the first connecting frame and the second connecting frame cooperate to form a quadrilateral structure and cooperate to enclose a blanking region, and a projection of the discharge port is located at a middle position of the blanking region; and

the first roller is rotatably arranged on the first mounting frame, and the second roller is rotatably arranged on the second mounting frame.

4. The roll coating execution terminal according to claim 3, wherein a plurality of telescopic

floating mechanisms are provided, the plurality of telescopic floating mechanisms are grouped into a first telescopic floating group and a second telescopic floating group, wherein the first telescopic floating group and the second telescopic floating group are connected to the mounting seat by using a base, the first telescopic floating group is connected to the first mounting frame, and the second
5 telescopic floating group is connected to the second mounting frame.

5. The roll coating execution terminal according to claim 4, wherein

the roll coating support further comprises a first rotating unit and a second rotating unit, the first rotating unit is arranged on the first mounting frame and rotatably connected to the first telescopic floating group, and the second rotating unit is arranged on the second mounting frame and rotatably connected to the second telescopic
10 floating group; and

a rotation axis of the first rotating unit is perpendicular to a rolling axis of the first roller, and a rotation axis of the second rotating unit is perpendicular to a rolling axis of the second roller.

6. The roll coating execution terminal according to any one of claims 1 to 5, wherein the telescopic floating mechanism comprises a guide rod, an elastic telescopic member, a linear bearing, and a telescopic sleeve, wherein the guide rod is connected to the mounting seat, the elastic telescopic
15 member is sleeved on the guide rod, the linear bearing is slidably sleeved outside the guide rod and abuts against the elastic telescopic member, the telescopic sleeve is sleeved outside the linear bearing, and the telescopic sleeve is connected to the roll coating assembly.

7. The roll coating execution terminal according to claim 6, wherein the telescopic floating
20 mechanism further comprises a protective sleeve, the protective sleeve is fixedly arranged outside the guide rod, and an outer wall of the telescopic sleeve is in sliding fit with an inner wall of the protective sleeve.

8. The roll coating execution terminal according to any one of claims 2 to 7, wherein the feeding mechanism comprises a feeding base, a mixing motor, a mixing transmission assembly, and a mixing
25 pipe, wherein the mixing motor and the mixing transmission assembly are arranged on the feeding base and are in driving connection, the mixing transmission assembly is in transmission connection with the mixing pipe and configured to drive the mixing pipe to rotate, the feeding base is provided with at least one feed port, the feed port communicates with the mixing pipe, and the discharge port is formed at an end of the mixing pipe away from the feeding base.

9. The roll coating execution terminal according to claim 8, wherein two feed ports are provided and are a first feed port and a second feed port, and the first feed port and the second feed port communicate with the mixing pipe.

10. The roll coating execution terminal according to claim 8, wherein the feeding mechanism further comprises an end cover and a fixing pipe, the feeding base is provided with a maintenance opening, and the end cover is detachably arranged on the maintenance opening; the fixing pipe is arranged on the feeding base, and the mixing pipe is rotatably arranged in the fixing pipe.

11. The roll coating execution terminal according to claim 1, wherein
the at least one telescopic floating mechanism comprises a first telescopic floating mechanism
10 and a second telescopic floating mechanism, wherein the first telescopic floating mechanism and the second telescopic floating mechanism are arranged in parallel and spaced from each other; and

the at least one group of roll coating assemblies comprises a first roll coating assembly, the first roll coating assembly comprises a first connecting rod and two rollers, the two rollers are a first roller and a second roller, the first connecting rod is hinged to the first telescopic floating mechanism and
15 the second telescopic floating mechanism, and the first roller and the second roller are arranged at two ends of the first connecting rod respectively.

12. The roll coating execution terminal according to claim 11, wherein
the at least one telescopic floating mechanism further comprises a third telescopic floating mechanism and a fourth telescopic floating mechanism, wherein the third telescopic floating
20 mechanism and the fourth telescopic floating mechanism are arranged in parallel and spaced from each other; and

the at least one group of roll coating assemblies further comprises a second roll coating assembly, the second roll coating assembly comprises a second connecting rod and two rollers, the two rollers are a third roller and a fourth roller, the second connecting rod is hinged to the third telescopic floating
25 mechanism and the fourth telescopic floating mechanism, and the third roller and the fourth roller are arranged at two ends of the second connecting rod respectively.

13. The roll coating execution terminal according to claim 12, wherein the roll coating execution terminal further comprises a first linkage mechanism and a second linkage mechanism, and the first telescopic floating mechanism is connected to the third telescopic floating mechanism by using the

first linkage mechanism, so that the first telescopic floating mechanism and the third telescopic floating mechanism are capable of synchronously telescopically moving; and the second telescopic floating mechanism is connected to the fourth telescopic floating mechanism by using the second linkage mechanism, so that the second telescopic floating mechanism and the fourth telescopic floating mechanism are capable of synchronously telescopically moving.

14. The roll coating execution terminal according to claim 12, wherein each telescopic floating mechanism comprises a fixed body, a movable body, and an elastic telescopic body, wherein one end of the fixed body is connected to the mounting seat, one end of the movable body is connected to the first connecting rod or the second connecting rod, and the other end of the fixed body is connected to the other end of the movable body by using the elastic telescopic body, so that the movable body is capable of telescopically moving relative to the fixed body.

15. The roll coating execution terminal according to claim 14, wherein the roll coating execution terminal further comprises a plurality of hinge assemblies and a plurality of torsion members, an end of each of the fixed bodies is rotatably connected to the mounting seat by using the hinge assembly, each of the torsion members is arranged on the hinge assembly, and two ends of the torsion member abut against the mounting seat and the fixed body respectively.

16. The roll coating execution terminal according to claim 14, wherein an end of each of the movable bodies is provided with a first connecting frame and a first rotating shaft, and the first connecting frame is rotatably connected to the first connecting rod or the second connecting rod by using the first rotating shaft.

17. The roll coating execution terminal according to claim 16, wherein end portions of both the first connecting rod and the second connecting rod are each provided with a second rotating shaft and a second connecting frame hinged to the second rotating shaft, the second connecting frame is connected to a corresponding roller among the first roller, the second roller, the third roller, and the fourth roller, an axis of the second rotating shaft is perpendicular to an axis of the first rotating shaft, and the axis of the second rotating shaft is perpendicular to a rolling axis of the corresponding roller.

18. The roll coating execution terminal according to any one of claims 12 to 17, wherein the roll coating execution terminal further comprises a connecting plate; and the first telescopic floating mechanism, the second telescopic floating mechanism, the third telescopic floating mechanism and

the fourth telescopic floating mechanism are connected to the connecting plate.

19. The roll coating execution terminal according to claim 18, wherein the connecting plate comprises a plate body and four extension bodies extending outward from the plate body, and the four extension bodies are connected to the first telescopic floating mechanism, the second telescopic floating mechanism, the third telescopic floating mechanism and the fourth telescopic floating mechanism in a one-to-one correspondence mode.

20. The roll coating execution terminal according to claim 19, wherein the connecting plate is made of an elastic material.

21. The roll coating execution terminal according to claim 18, wherein the connecting plate comprises a first plate body, a universal joint, and a second plate body, wherein one end of the first plate body is rotatably connected to one end of the second plate body by using the universal joint, the other end of the first plate body is connected to the first telescopic floating mechanism and the third telescopic floating mechanism, and the other end of the second plate body is connected to the second telescopic floating mechanism and the fourth telescopic floating mechanism.

22. The roll coating execution terminal according to claim 12, wherein the first connecting rod has a length less than that of the second connecting rod.

23. The roll coating execution terminal according to claim 22, wherein the roll coating execution terminal further comprises a fixed support, and the fixed support is configured to position the discharge port; and the fixed support is arranged on the first connecting rod.

24. The roll coating execution terminal according to claim 1, wherein the at least one group of roll coating assemblies comprises a first roll coating assembly and a second roll coating assembly; the at least one telescopic floating mechanism is configured to apply a pressure to the first roll coating assembly and the second roll coating assembly, and a pressure applied by the first roll coating assembly to the construction surface is greater than that applied by the second roll coating assembly to the construction surface.

25. The roll coating execution terminal according to claim 24, wherein the roll coating execution terminal further comprises a feeding mechanism and a mounting base;

the feeding mechanism is connected to the mounting seat, and a discharge port of the feeding mechanism faces the construction surface;

the first roll coating assembly and the second roll coating assembly are both connected to the mounting base, the second roll coating assembly is movably erected on the mounting base, and on a vertical construction surface, the second roll coating assembly is higher than the first roll coating assembly;

5 the mounting base is provided with a first mounting portion, a supporting rotating shaft is mounted in the first mounting portion, and each of the telescopic floating mechanisms rotatably matches the mounting base by using the supporting rotating shaft; and

each of the telescopic floating mechanisms is assembled with the feeding mechanism.

26. The roll coating execution terminal according to claim 25, wherein the roll coating execution
10 terminal is provided with two telescopic floating mechanisms, each of the telescopic floating mechanisms comprises a fixed body, a movable body, and an elastic telescopic body, wherein the fixed body is installed with the feeding mechanism, the movable bodies of the two telescopic floating mechanisms are connected to two ends of a mounting plate respectively, and a middle portion of the mounting plate is sleeved on the supporting rotating shaft by using a wear-resistant sleeve.

15 27. The roll coating execution terminal according to claim 26, wherein the feeding mechanism comprises a rotary joint, a mixer, and a mounting disc, wherein the rotary joint is connected to the mounting seat, the at least one telescopic floating mechanism is mounted on the rotary joint by using the mounting disc, the rotary joint is connected to the mixer, and a discharge port of the mixer forms the discharge port of the feeding mechanism.

20 28. The roll coating execution terminal according to claim 27, wherein the first roll coating assembly comprises a first roller, a second roller, a first assembly member, a second assembly member, and a first connecting rod, wherein the first connecting rod penetrates through the mounting base, the first assembly member is movably connected to one end of the first connecting rod, the second assembly member is movably connected to the other end of the first connecting rod, the first roller is
25 rotatably mounted on the first assembly member, and the second roller is rotatably mounted on the second assembly member.

29. The roll coating execution terminal according to claim 28, wherein the discharge port of the mixer is located between the first roller and the second roller; and the discharge port of the mixer corresponds to the middle of the first roller and the second roller.

30. The roll coating execution terminal according to claim 28, wherein the first assembly member comprises a first assembly plate, a first adjusting support, a second adjusting support, and a first positioning ring, wherein the first assembly plate is rotatably mounted at one end of the first connecting rod, the first assembly plate is fixed to the first connecting rod in a limited mode by using the first positioning ring, the first assembly plate is provided with a first sliding groove, one end of the first adjusting support is movably mounted in the first sliding groove, the other end of the first adjusting support rotatably matches one end of the first roller, one end of the second adjusting support is movably mounted in the first sliding groove, and the other end of the second adjusting support rotatably matches the other end of the first roller; and

the second assembly member comprises a second assembly plate, a third adjusting support, a fourth adjusting support, and a second positioning ring, wherein the second assembly plate is rotatably mounted at the other end of the first connecting rod, the second assembly plate is fixed to the first connecting rod in a limited mode by using the second positioning ring, the second assembly plate is provided with a second sliding groove, one end of the third adjusting support is movably mounted in the second sliding groove, the other end of the third adjusting support rotatably matches one end of the second roller, one end of the fourth adjusting support is movably mounted in the second sliding groove, and the other end of the fourth adjusting support rotatably matches the other end of the second roller.

31. The roll coating execution terminal according to claim 27, wherein the second roll coating assembly comprises a third roller, a fourth roller, a third assembly member, a fourth assembly member, a second connecting rod, a third connecting rod, a first limiting baffle, and a second limiting baffle; the mounting base is provided with a second mounting portion, the third roller is rotatably mounted on the third assembly member, the third assembly member is movably connected to one end of the second connecting rod, the other end of the second connecting rod is rotatably connected to the second mounting portion, the first limiting baffle is mounted on the second mounting portion, the first limiting baffle abuts against the second connecting rod in a limiting mode, and the third roller is higher than the first roller when the vertical construction surface is constructed; the fourth roller is rotatably mounted on the fourth assembly member, the fourth assembly member is movably connected to one end of the third connecting rod, the other end of the third connecting rod is rotatably

connected to the second mounting portion, the second limiting baffle is mounted on the second mounting portion, the second limiting baffle abuts against the third connecting rod in a limiting mode, and the fourth roller is higher than the second roller when the vertical construction surface is constructed.

5 32. The roll coating execution terminal according to claim 31, wherein the third assembly member comprises a third assembly plate, a fifth adjusting support, a sixth adjusting support, and a third positioning ring, wherein the third assembly plate is rotatably mounted at one end of the second connecting rod, the third assembly plate is fixed to the second connecting rod in a limited mode by using the third positioning ring, the third assembly plate is provided with a third sliding groove, one
10 end of the fifth adjusting support is movably mounted in the third sliding groove, the other end of the fifth adjusting support rotatably matches one end of the third roller, one end of the sixth adjusting support is movably mounted in the third sliding groove, and the other end of the sixth adjusting support rotatably matches the other end of the third roller; and

 the fourth assembly member comprises a fourth assembly plate, a seventh adjusting support, an
15 eighth adjusting support, and a fourth positioning ring, wherein the fourth assembly plate is rotatably mounted at one end of the third connecting rod, the fourth assembly plate is fixed to the third connecting rod in a limited mode by using the fourth positioning ring, the fourth assembly plate is provided with a fourth sliding groove, one end of the seventh adjusting support is movably mounted in the fourth sliding groove, the other end of the seventh adjusting support rotatably matches one end
20 of the fourth roller, one end of the eighth adjusting support is movably mounted in the fourth sliding groove, and the other end of the eighth adjusting support rotatably matches the other end of the fourth roller.

33. A roll coating robot, comprising:

a walking chassis;

25 a mechanical arm arranged on the walking chassis; and

 the roll coating execution terminal according to any one of claims 1 to 32, wherein the roll coating execution terminal is arranged at a tail end of the mechanical arm away from the walking chassis.