

A GUIDING APPARATUS FOR PROFILES

Field of the Invention

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The present invention relates to the field of profile processing, particularly to an apparatus for guiding profiles.

Background of the Invention

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Profiles are solid straight bars made from metal by means of plastic processing and having a certain sectional shapes and sizes. Profiles can be provided with a variety of types, and used in diverse applications. Therefore, profiles play an important role in rolling production. In particular, aluminum profiles are very popular in industry due to various advantages, such as low weight, excellent shaping performance, high intensity, strong corrosion resistance, long lifetime, reproducible capability, low pollution, easy maintenance, or the like.

Profiles for industry are generally used as external components or skeletons. Therefore, the junction sites of profiles should be water-resistant. Water-resistance of profiles is generally achieved through insertion of rubber strip. Current operation for this purpose is performed by labor, that is, the rubber strip is inserted when the profiles are held by the operator's hands. However, corners of the profiles are generally unpolished, thus having sharp edges. In particular, the edges of T-type profiles are relatively thin, and thus are extraordinary sharp. Therefore, operators will be easily scratched by the profiles during operation, causing slight or even serious body injuries.

Summary of the Invention

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The technical problem to be solved by the present invention is to provide a guiding apparatus suitably for metal profiles, in particular T-type profiles, which is unnecessary to be held by operator's hands and thus will cause no injuries.

In order to solve the above technical problem, according to the present invention a guiding apparatus for profiles is proposed, including a main support and a secondary support fixed on the main support. The guiding apparatus further includes a fixing device, a dispatching device, and a turnover device, wherein the fixing device is fixed
5 on the main support for fixing profiles, the turnover device is fixed on the secondary support for overturning the profiles into an operating angle, and the dispatching device is configured to connect the fixing device with the turnover device for dispatching the profiles to fall from the turnover device into the fixing device in sequence.

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Specifically, the fixing device includes a fixing main plate, a positioning plate, a fixer, a supporting shaft, and a receiving plate. The fixing main plate is fixed on the main support. The positioning plate is arranged on a front end of the fixing main plate, while the receiving plate is arranged on a rear end thereof. An upper surface of the
15 receiving plate is co-planar with that of the fixing main plate. The supporting shaft is arranged at a position on the fixing main plate near the front end thereof, and has a same level as the receiving plate along a vertical direction. The fixer is arranged above the supporting shaft.

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Specifically, the fixing device further includes a fixing block, which is fixed at a position above a rear edge of the receiving plate.

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Specifically, the fixing device further includes a telescopic cylinder, a fixing cylinder, a supporting cylinder, a fixing bracket, and a receiving cylinder. The
telescopic cylinder is fixed on a front end of the fixing bracket for driving the positioning plate. The fixing bracket is fixed at a position on the fixing main plate near the front end thereof. The supporting cylinder is fixed on a lower surface of the fixing bracket for driving the supporting shaft. The fixing cylinder is fixed on an upper surface of the fixing bracket for driving the fixer. The receiving cylinder is
30 fixed on a lower surface of a rear end of the fixing main plate for driving the receiving plate.

Specifically, the turnover device includes a turnover bracket, two separators, an isolator, at least two temporary storing members, and at least two limiting stoppers.

The turnover bracket is fixed on the secondary support. The isolator is arranged on a lower end of the turnover bracket. The two separators are respectively arranged on both ends of the turnover bracket. The at least two temporary storing members are spaced from each other, and arranged respectively at two sides of the lower end of the turnover bracket. The at least two limiting stoppers are spaced from each other, and arranged respectively at two sides of an upper end of the turnover bracket. The feeding board is fixed at a side of the turnover bracket.

Specifically, each isolator includes two dual-shaft cylinders, two driving levers, and at least two isolating seats. The two dual-shaft cylinders are fixed under two sides of the turnover bracket, respectively. The two driving levers are fixed at two sides of the two dual-shaft cylinders, respectively. The at least two isolating seats are spaced from each other, and fixed respectively at a middle portion of the two driving levers.

Specifically, each temporary storing member includes a temporary storing seat and a temporary storing cylinder, which is fixed at the lower end of the turnover bracket for driving the temporary storing seat.

Specifically, each separator includes a separating bracket, a protecting cover, an upper separating unit, and a lower separating unit. The upper separating unit and the lower separating unit are fixed on the separating bracket, with the former above the latter. The separating bracket is fixed at an end of the turnover bracket. The protecting cover covers the upper separating unit and the lower separating unit.

Specifically, the upper separating unit includes an upper cylinder, an upper separating shaft, a limiting shaft, an upper fixing column, and an upper connecting element. The upper cylinder is fixed on an upper surface of the separating bracket. The upper separating shaft and the limiting shaft are arranged on an upper portion of the separating bracket, with the former above the latter. The upper fixing column is fixed at a rear side of the upper portion of the separating bracket between the upper separating shaft and the limiting shaft. The upper connecting element is movably mounted on the upper fixing column, and has two ends respectively connected with the upper separating shaft and the limiting shaft.

Specifically, the lower separating unit includes a lower cylinder, a lower separating shaft, a receiving shaft, a lower fixing column, and a lower connecting element. The lower cylinder is fixed on a lower surface of the separating bracket. The lower separating shaft and the receiving shaft are arranged on a lower portion of the separating bracket, with the former under the latter. The lower fixing column is fixed at a rear side of the lower portion of the separating bracket between the lower separating shaft and the limiting shaft. The lower connecting element is movably mounted on the lower fixing column, and has two ends respectively connected with the lower separating shaft and the limiting shaft.

Specifically, the dispatching device includes a front guiding plate, at least one middle guiding plate, a rear guiding plate, at least two righting blocks, and at least one dispatcher. The front guiding plate is fixed on a right portion of a front end of the fixing device. The at least one middle guiding plate is fixed on a left portion of the fixing device. The rear guiding plate is fixed on a right portion of a rear end of the fixing device. The at least two righting blocks, as a pair, are fixed respectively on a right portion and the left portion of the fixing device. The at least one dispatcher is fixed on the right portion of the fixing device.

Specifically, the dispatcher includes a main body, an upper dispatching shaft, a lower dispatching shaft, a dispatching connector, a cylinder bracket, a fixing bracket, a dispatching cylinder, and a guiding vertical plate. The main body is fixed on the right portion of the fixing device. The upper dispatching shaft and the lower dispatching shaft pass through the main body, with the former above the latter. Both ends of the dispatching connector are respectively connected with rear portions of the upper dispatching shaft and the lower dispatching shaft, while a middle portion of the dispatching connector is fixed on the main body through the fixing bracket. The dispatching cylinder is fixed on the main body through the cylinder bracket. The rear portion of the upper dispatching shaft is connected with the dispatching cylinder. The guiding vertical plate is fixed on an upper surface of the main body.

Specifically, the guiding apparatus further includes speed reducing cushions, which are associated with the dispatcher and the middle guiding plate, respectively, and fixed on respective side surfaces of the dispatcher and the middle guiding plate.

Specifically, the guiding apparatus further includes at least one position sensor, at least one falling sensor, a feeding board, and an exporting board. The at least one position sensor is fixed on a middle portion of the turnover device. The at least one
5 falling sensor is fixed on a lower portion of the turnover device. The feeding board is arranged above the turnover device. The exporting board is fixed on the main support, and suspended on the top of the main support.

The present invention can bring about the following advantageous effects.
10 According to the guiding apparatus for profiles of the present invention, labor operations are no longer necessary due to provision of mechanical apparatus, which is particularly suitable for T-type profiles. The profiles are fixed by the fixing device, and overturned by the turnover device. Therefore, it is unnecessary to hold the profiles with hands, and no labor operations on the profiles are necessary. Accordingly,
15 operators would not be scratched and thus injured during processing. Moreover, the traditional labor operation is changed, achieving an automatic operation, improving the operation efficiency, and reducing the labor costs. Therefore, the guiding apparatus for profiles is of industry applicability.

20 **Brief Description of the Drawings**

Fig. 1 schematically shows the whole structure of a guiding apparatus for profiles according to the present invention, in a perspective view;

25 Fig. 2 schematically shows the structure of a separating device according to the present invention, in a perspective view;

Figs. 3(a) and 3(b) schematically show the structure of a separator according to the present invention, in a front perspective view and a rear perspective view,
30 respectively;

Fig. 4 schematically shows the structure of a combination of a fixing device and a dispatching device according to the present invention, in a perspective view;

Fig. 5 schematically shows the structure of a dispatcher according to the present invention, in a perspective view; and

Fig. 6 schematically shows the structure of a profile according to the present invention, in a perspective view.

Detailed Description of the Embodiments

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

Figs. 1 to 6 collectively show a guiding apparatus for profiles according to an embodiment of the present invention. The guiding apparatus for profiles includes a main support 3, a secondary support 4 fixed on the main support 3, a fixing device 5, a dispatching device 6, a turnover device 7, a feeding board 8 and an exporting board 9. The fixing device 5 is fixed on the main support 3, and the turnover device 7 is fixed on the secondary support 4. The dispatching device 6 connects the fixing device 5 with the turnover device 7. The feeding board 8 is arranged above the turnover device 7. The exporting board 9 is fixed on the main support 3, and suspended thereabove. During normal operation, profiles 1 are directly stacked on the feeding board 8, and guided by the feeding board 8 to fall down on the turnover device 7. The turnover device 7 separates profiles 1 that are stacked along different directions from each other, and turns them over to desirable operating angles. In the present embodiment, the operating angle is set so that T-type profile 1 can be turned over to an inverted T shape and separated from other profiles. A single profile 1 is dispatched by the dispatching device 6 each time to fall down in the fixing device 5, and then fixed there. Thus a rubber strip can be mounted in the profile 1. After the rubber strip is mounted, the fixing device 5 unlocks the profile 1, which will fall down on the feeding board 8 and then is collected there. Then, another profile 1 is dispatched by the dispatching device 6 to fall down in the fixing device 5. All operations of the guiding apparatus is controlled by a control unit 2 mounted on the main support 3. By means of the guiding apparatus, the defect that the rubber strip must be mounted in the profile through holding the rubber strip by hands can be eliminated, and labor involvement is reduced. Thus body injuries caused by sharp edges of profiles can be

avoided.

Specifically, the fixing device 5 includes a fixing main plate 51, a positioning plate 52, a fixer 53, a supporting shaft 54, and a receiving plate 55. The fixing main plate 51 is fixed on the main support 3. The positioning plate 52 is arranged on a head end of the fixing main plate 51, while the receiving plate 55 is arranged on a tail end thereof. The upper surface of the receiving plate 55 is co-planar with that of the fixing main plate 51. The supporting shaft 54 is arranged at a position on the fixing main plate 51 that is near the front end of the fixing main plate 51. The supporting shaft 54 has a same level as the receiving plate 55 along a vertical direction. The fixer 53 is arranged above the supporting shaft 54. The fixing device 5 further includes a fixing block 56, which is fixed at a position above a rear edge of the receiving plate 55. The fixing device 5 further includes a telescopic cylinder 521, a fixing cylinder 532, a supporting cylinder 541, a fixing bracket 531, and a receiving cylinder 551. The telescopic cylinder 521 is fixed on a head end of the fixing bracket 531 to drive the positioning plate 52. The fixing bracket 531 is fixed at a position of the fixing main plate 51 near the head end. The supporting cylinder 541 is fixed on a lower surface of the fixing bracket 531 to drive the supporting shaft 54. The fixing cylinder 532 is fixed on an upper surface of the fixing bracket 531 to drive the fixer 53. The receiving cylinder 551 is fixed on a lower surface of the tail end of the fixing main plate to drive the receiving plate 55. By means of closure of the supporting shaft 54 and the receiving plate 55 of the fixing device 5, the profile 1 dropped from the dispatching device 6 can essentially stay on the upper surface of the fixing main plate 51. The fixing main plate 51 has a shape similar to that formed by two concentric through-holes, the inner through-hole of which can allow direct passage of the profile 1. The profile 1 can be received mainly through closure of the supporting shaft 54 and the receiving plate 55, and then fixed through inter-engagement of the fixer 53, the positioning plate 52, and the fixing block 56. In this manner, the profile 1 would not be movable when the rubber strip is mounted, so that the rubber strip can be precisely mounted in a rubber strip groove that is arranged in the profile 1 in advance.

Specifically, the turnover device 7 includes a turnover bracket 71, two separators 72, an isolator 73, at least two temporary storing members 74, and at least two limiting stoppers 75. The turnover bracket 71 is fixed on the secondary support 4. The

isolator 73 is arranged on a lower end of the turnover bracket 71. The two separators 72 are spaced from each other, and arranged at two sides of the turnover bracket 71, respectively. The at least two temporary storing members 74 are spaced from each other, and arranged at two sides of the lower end of the turnover bracket 71, respectively. The at least two limiting stoppers 75 are spaced from each other, and arranged at two sides of an upper end of the turnover bracket 71, respectively. The feeding board 8 is fixed at a side of the turnover bracket 71.

Each isolator 73 includes two dual-shaft cylinders 731, two driving levers 732, and at least a pair of isolating seats 733. The two dual-shaft cylinders 731 are fixed under respective sides of the turnover bracket 71. The two driving levers 732 are fixed at two sides of the dual-shaft cylinders 731, respectively. The pair of isolating seats 733 are spaced from each other, and fixed respectively at a middle portion of the driving levers 732. Each temporary storing member 74 includes a temporary storing seat 741 and a temporary storing cylinder 742, which is fixed at the lower end of the turnover bracket 71 for driving the temporary storing seat 741. The isolator 73 is merely used for isolating overturned profiles 1 from non-overturned profiles 1, while the temporary storing member 74 is used for storing the isolated, overturned profiles 1, and performs based on whether there is a profile existing in the dispatching device 6. Therefore, it ensures that the dispatching device 6 can be replenished with new profile 1 after the profile 1 in the dispatching device 6 falls down in the fixing device 5, so that operation can be normally performed. At least one falling sensor 77 is fixed at the lower portion of the turnover device 7 for detection of profiles existing in the dispatching device 6. When the falling sensor 77 detects there is no profile in the dispatching device 6, the temporary storing cylinder 742 will be driven to move the temporary storing seat 741, so that profile 1 can fall down, one each time.

Specifically, the separator 72 includes a separating bracket 721, a protecting cover 722, an upper separating unit 723, and a lower separating unit 724. The upper separating unit 723 and the lower separating unit 724 are fixed on the separating bracket 721, with the former being arranged above the latter. The separating bracket 721 is fixed at an end of the turnover bracket 71, and the protecting cover 722 covers the upper separating unit 723 and the lower separating unit 724. The upper separating unit 723 includes an upper cylinder 7231, an upper separating shaft 7232, a limiting

shaft 7233, an upper fixing column 7234, and an upper connecting element 7235. The upper cylinder 7231 is fixed on an upper surface of the separating bracket 721. The upper separating shaft 7232 and the limiting shaft 7233 are arranged on the upper portion of the separating bracket 721, with the former being arranged above the latter.

5 The upper fixing column 7234 is fixed at a rear side of the upper portion of the separating bracket 721 between the upper separating shaft 7232 and the limiting shaft 7233. The upper connecting element 7235 is movably mounted on the upper fixing column 7234, and has two ends respectively connected with the upper separating shaft 7232 and the limiting shaft 7233. The lower separating unit 724 includes a lower cylinder 7241, a lower separating shaft 7242, a receiving shaft 7243, a lower fixing column 7244, and a lower connecting element 7245. The lower cylinder 7241 is fixed on a lower surface of the separating bracket 721. The lower separating shaft 7242 and the receiving shaft 7243 are arranged on the lower portion of the separating bracket 721, with the former being arranged under the latter. The lower fixing column 7244 is

10 fixed at a rear side of the lower portion of the separating bracket 721 between the lower separating shaft 7242 and the limiting shaft 7243. The lower connecting element 7245 is movably mounted on the lower fixing column 7244, and has two ends respectively connected with the lower separating shaft 7242 and the limiting shaft 7243. The upper separating unit 723 is mainly used to overturn the profiles 1 into

20 corresponding directions, and will not disturb profiles 1 stacked above when overturning the lowermost profile 1, so that profiles 1 can be separated from each other. The lower separating unit 724 receives the profiles 1 being overturned by the upper separating unit 723 through the receiving shaft 7243, thus enabling the overturned profiles 1 to maintain their desirable directions to be overturned. After

25 overturning, the receiving shaft 7243 retreats to allow profiles 1 falling down to the isolator 73. During this procedure, the lower separating shaft 7242 detects the profiles 1 and limits their positions again, ensuring profiles 1, when above the isolator 73, are in desirable positions and directions. In this manner, the stacked profiles 1 can be separated and overturned, ensuring the subsequent operation for inserting rubber strips

30 into the profiles 1. At least one position sensor 76 is arranged above the isolator 73. The position sensor 76 is fixed on a middle portion of the turnover device 7, i.e., above the isolator 73. The position sensor 76 is mainly used to detect whether the profile 1 has been overturned to a predetermined direction. If not, the position sensor 76 sends a feedback to the control unit 2, which then alarms.

Specifically, the dispatching device 6 includes a front guiding plate 61, at least one middle guiding plate 62, a rear guiding plate 63, at least two righting blocks 64, and at least one dispatcher 65. The front guiding plate 61 is fixed on a right portion of the front end of the fixing device 5. The at least one middle guiding plate 62 is fixed on a left portion of the fixing device 5. The rear guiding plate 63 is fixed on a right portion of the rear end of the fixing device 5. The at least two righting blocks 64 as a pair are fixed respectively on a right portion and the left portion of the fixing device 5. The at least one dispatcher 65 is fixed on the right portion of the fixing device 5.

Specifically, the dispatcher 65 includes a main body 651, an upper dispatching shaft 652, a lower dispatching shaft 653, a dispatching connector 654, a cylinder bracket 655, a fixing bracket 656, a dispatching cylinder 657, and a guiding vertical plate 658. The main body 651 is fixed on the right portion of the fixing device 5. The upper dispatching shaft 652 and the lower dispatching shaft 653 pass through the main body 651, with the former above the latter. Both ends of the dispatching connector 654 are respectively connected with rear portions of the upper dispatching shaft 652 and the lower dispatching shaft 653, while a middle portion of the dispatching connector 654 is fixed on the main body 651 through the fixing bracket 656. The dispatching cylinder 657 is fixed on the main body 651 through the cylinder bracket 655. The rear portion of the upper dispatching shaft 652 is connected with the dispatching cylinder 657. The guiding vertical plate 658 is fixed on an upper surface of the main body 651.

Under the influences of the front guiding plate 61, the middle guiding plate 62, the rear guiding plate 63, and the guiding vertical plate 658, it can ensure that the profile 1 will not change its direction after it falls down from the temporary storing member 74. The righting block 64 functions to guide the fallen profile 1 to a predetermined position, thus ensuring normal operation of the guiding apparatus. The dispatcher 65 is used to ensure that each time only one profile 1 in the dispatching device 6 can fall into the fixing device 5, although more than one profile 1 can be stored in the dispatching device. The falling sensor 77 merely detects the uppermost profile 1 stored in the dispatching device 6, and the temporary storing member 74 will be activated so that a profile 1 will fall when there is no profile. The upper dispatching

shaft 652 and the lower dispatching shaft 653 operate as follows. When there is a profile 1 in the fixing device 5, the upper dispatching shaft 652 retreats while the lower dispatching shaft 653 extends, so that the profile 1 will be held and thus cannot fall down. When there is no profile 1 in the fixing device 5, the lower dispatching shaft 653 retreats while the upper dispatching shaft 652 extends to hold the second-from-last profile 1, so that it cannot fall down. In the meantime, the lowermost profile 1 will fall into the fixing device 5 due to retreat of the lower dispatching shaft 653. Therefore, it can ensure that only one profile 1 exists in the fixing device 5.

10 Preferably, there is provided with speed reducing cushions 66, which are associated with the dispatcher 65 and the middle guiding plate 62, respectively. The speed reducing cushions 66 are fixed on respective side surfaces of the dispatcher 65 and the middle guiding plate 62. The speed reducing cushions 66 are mainly used to ensure that the profile 1 falling from the separating device to the dispatching device 6
15 would not be too fast to change its direction due to collision. Thus the profile 1 can be normally guided.

The foregoing description is merely illustrative of preferred embodiments of the present invention, and is not intended to limit the present invention. Various changes
20 and modifications may be made by those skilled in the art. Any modifications, equivalent substitutions, improvements, and the like within the spirit and principles of the present invention are intended to be included within the scope of the present invention.

25 List of Parts

- 1 Profile;
- 2 Control unit;
- 3 main support;
- 30 4 secondary support;
- 5 fixing device;
- 51 fixing main plate;
- 52 positioning plate;
- 521 telescopic cylinder;

- 53 fixer;
 - 531 fixing bracket;
 - 532 fixing cylinder;
- 54 supporting shaft;
- 5 541 supporting cylinder;
- 55 receiving plate;
 - 551 receiving cylinder;
- 56 fixing block;
- 6 dispatching device;
- 10 61 front guiding plate;
- 62 middle guiding plate;
- 63 rear guiding plate;
- 64 righting block;
- 65 dispatcher;
- 15 651 main body;
- 652 upper dispatching shaft;
- 653 lower dispatching shaft;
- 654 dispatching connector;
- 655 cylinder bracket;
- 20 656 fixing bracket;
- 657 dispatching cylinder;
- 658 guiding vertical plate;
- 66 speed reducing cushion;
- 7 turnover device;
- 25 71 turnover bracket;
- 72 separator;
 - 721 separating bracket;
 - 722 protecting cover;
 - 723 upper separating unit;
- 30 7231 upper cylinder;
- 7232 upper separating shaft;
- 7233 limiting shaft;
- 7234 upper fixing column;
- 7235 upper connecting element;

724 lower separating unit;
7241 lower cylinder;
7242 lower separating shaft;
7243 receiving shaft;
5 7244 lower fixing column;
7245 lower connecting element;
73 isolator;
731 dual-shaft cylinder;
732 driving lever;
10 733 isolating seat;
74 temporary storing member;
741 temporary storing seat;
742 temporary storing cylinder;
75 limiting stopper;
15 76 position sensor;
77 falling sensor;
8 feeding board; and
9 exporting board.
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Claims

1. A guiding apparatus for profiles, including a main support (3) and a secondary support (4) fixed on the main support (3),

5 characterized in that the guiding apparatus further includes a fixing device (5), a dispatching device (6), and a turnover device (7), wherein the fixing device (5) is fixed on the main support (3) for fixing profiles (1), the turnover device (7) is fixed on the secondary support (4) for overturning the profiles (1) into an operating angle, and the dispatching device (6) is configured to connect the fixing device (5) with the
10 turnover device (7) for dispatching the profiles (1) to fall from the turnover device (7) into the fixing device (5) in sequence, and

the fixing device (5) includes a fixing main plate (51), a positioning plate (52), a fixer (53), a supporting shaft (54), and a receiving plate (55),

wherein the fixing main plate (51) is fixed on the main support (3),

15 the positioning plate (52) is arranged on a front end of the fixing main plate (51), while the receiving plate (55) is arranged on a rear end thereof,

an upper surface of the receiving plate (55) is co-planar with that of the fixing main plate (51),

the supporting shaft (54) is arranged at a position on the fixing main plate (51)
20 near the front end thereof, and has a same level as the receiving plate (55) along a vertical direction, and

the fixer (53) is arranged above the supporting shaft (54).

2. The guiding apparatus according to claim 1, characterized in that the fixing
25 device (5) further includes a fixing block (56), which is fixed at a position above a rear edge of the receiving plate (55).

3. The guiding apparatus according to claim 2, characterized in that the fixing
30 device (5) further includes a telescopic cylinder (521), a fixing cylinder (532), a supporting cylinder (541), a fixing bracket (531), and a receiving cylinder (551),

wherein the telescopic cylinder (521) is fixed on a front end of the fixing bracket (531) for driving the positioning plate (52),

the fixing bracket (531) is fixed at a position on the fixing main plate (51) near the front end thereof,

the supporting cylinder (541) is fixed on a lower surface of the fixing bracket (531) for driving the supporting shaft (54),

the fixing cylinder (532) is fixed on an upper surface of the fixing bracket (531) for driving the fixer (53), and

5 the receiving cylinder (551) is fixed on a lower surface of a rear end of the fixing main plate (51) for driving the receiving plate (55).

4. The guiding apparatus according to claim 1, characterized in that the turnover device (7) includes a turnover bracket (71), two separators (72), an isolator (73), at
10 least two temporary storing members (74), and at least two limiting stoppers (75),

wherein the turnover bracket (71) is fixed on the secondary support (4),

the isolator (73) is arranged on a lower end of the turnover bracket (71),

the two separators (72) are respectively arranged on both ends of the turnover bracket (71),

15 the at least two temporary storing members (74) are spaced from each other, and arranged respectively at two sides of the lower end of the turnover bracket (71),

the at least two limiting stoppers (75) are spaced from each other, and arranged respectively at two sides of an upper end of the turnover bracket (71), and

the feeding board (8) is fixed at a side of the turnover bracket (71).

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5. The guiding apparatus according to claim 4, characterized in that each isolator (73) includes two dual-shaft cylinders (731), two driving levers (732), and at least two isolating seats (733),

25 wherein the two dual-shaft cylinders (731) are fixed under two sides of the turnover bracket (71), respectively,

the two driving levers (732) are fixed at two sides of the two dual-shaft cylinders (731), respectively, and

the at least two isolating seats (733) are spaced from each other, and fixed respectively at a middle portion of the two driving levers (732).

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6. The guiding apparatus according to claim 4, characterized in that each temporary storing member (74) includes a temporary storing seat (741) and a temporary storing cylinder (742), which is fixed at the lower end of the turnover bracket (71) for driving the temporary storing seat (741).

7. The guiding apparatus according to claim 4, characterized in that each separator (72) includes a separating bracket (721), a protecting cover (722), an upper separating unit (723), and a lower separating unit (724),

5 wherein the upper separating unit (723) and the lower separating unit (724) are fixed on the separating bracket (721), with the former above the latter,

the separating bracket (721) is fixed at an end of the turnover bracket (71), and

the protecting cover (722) covers the upper separating unit (723) and the lower separating unit (724).

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8. The guiding apparatus according to claim 7, characterized in that the upper separating unit (723) includes an upper cylinder (7231), an upper separating shaft (7232), a limiting shaft (7233), an upper fixing column (7234), and an upper connecting element (7235),

15 wherein the upper cylinder (7231) is fixed on an upper surface of the separating bracket (721),

the upper separating shaft (7232) and the limiting shaft (7233) are arranged on an upper portion of the separating bracket (721), with the former above the latter,

20 the upper fixing column (7234) is fixed at a rear side of the upper portion of the separating bracket (721) between the upper separating shaft (7232) and the limiting shaft (7233), and

the upper connecting element (7235) is movably mounted on the upper fixing column (7234), and has two ends respectively connected with the upper separating shaft (7232) and the limiting shaft (7233).

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9. The guiding apparatus according to claim 7, characterized in that the lower separating unit (724) includes a lower cylinder (7241), a lower separating shaft (7242), a receiving shaft (7243), a lower fixing column (7244), and a lower connecting element (7245),

30 wherein the lower cylinder (7241) is fixed on a lower surface of the separating bracket (721),

the lower separating shaft (7242) and the receiving shaft (7243) are arranged on a lower portion of the separating bracket (721), with the former under the latter,

the lower fixing column (7244) is fixed at a rear side of the lower portion of the

separating bracket (721) between the lower separating shaft (7242) and the limiting shaft (7243), and

the lower connecting element (7245) is movably mounted on the lower fixing column (7244), and has two ends respectively connected with the lower separating shaft (7242) and the limiting shaft (7243).

10. The guiding apparatus according to claim 1, characterized in that the dispatching device (6) includes a front guiding plate (61), at least one middle guiding plate (62), a rear guiding plate (63), at least two righting blocks (64), and at least one dispatcher (65),

wherein the front guiding plate (61) is fixed on a right portion of a front end of the fixing device (5),

the at least one middle guiding plate (62) is fixed on a left portion of the fixing device (5),

15 the rear guiding plate (63) is fixed on a right portion of a rear end of the fixing device (5),

the at least two righting blocks (64), as a pair, are fixed respectively on a right portion and the left portion of the fixing device (5), and

the at least one dispatcher (65) is fixed on the right portion of the fixing device (5).

11. The guiding apparatus according to claim 10, characterized in that the dispatcher (65) includes a main body (651), an upper dispatching shaft (652), a lower dispatching shaft (653), a dispatching connector (654), a cylinder bracket (655), a fixing bracket (656), a dispatching cylinder (657), and a guiding vertical plate (658),

wherein the main body (651) is fixed on the right portion of the fixing device (5),

the upper dispatching shaft (652) and the lower dispatching shaft (653) pass through the main body (651), with the former above the latter,

both ends of the dispatching connector (654) are respectively connected with rear portions of the upper dispatching shaft (652) and the lower dispatching shaft (653), while a middle portion of the dispatching connector (654) is fixed on the main body (651) through the fixing bracket (656),

the dispatching cylinder (657) is fixed on the main body (651) through the cylinder bracket (655),

the rear portion of the upper dispatching shaft (652) is connected with the dispatching cylinder (657), and

the guiding vertical plate (658) is fixed on an upper surface of the main body (651).

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12. The guiding apparatus according to claim 11, characterized in that further including speed reducing cushions (66), which are associated with the dispatcher (65) and the middle guiding plate (62), respectively, and fixed on respective side surfaces of the dispatcher (65) and the middle guiding plate (62).

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13. The guiding apparatus according to any one of claims 1 to 12, characterized in that further including at least one position sensor (76), at least one falling sensor (77), a feeding board (8), and an exporting board (9),

15 wherein the at least one position sensor (76) is fixed on a middle portion of the turnover device (7),

the at least one falling sensor (77) is fixed on a lower portion of the turnover device (7),

the feeding board (8) is arranged above the turnover device (7), and

20 the exporting board (9) is fixed on the main support (3), and suspended on the top of the main support (3).