US 20140175032A1

(19) **United States**

(12) **Patent Application Publication**

(10) **Pub. No.: US 2014/0175032 A1**

(43) **Pub. Date: Jun. 26, 2014**

CHEN

(54) **MOUNTING APPARATUS FOR GOODS CHANNEL**

(71) Applicant: **HON HAI PRECISION INDUSTRY CO., LTD.**, New Taipei (TW)

(72) Inventor: **YUN-LUNG CHEN**, New Taipei (TW)

(73) Assignee: **HON HAI PRECISION INDUSTRY CO., LTD.**, New Taipei (TW)

(21) Appl. No.: **13/972,308**

(22) Filed: **Aug. 21, 2013**

(30) **Foreign Application Priority Data**

Dec. 20, 2012 (CN) 2012105577406

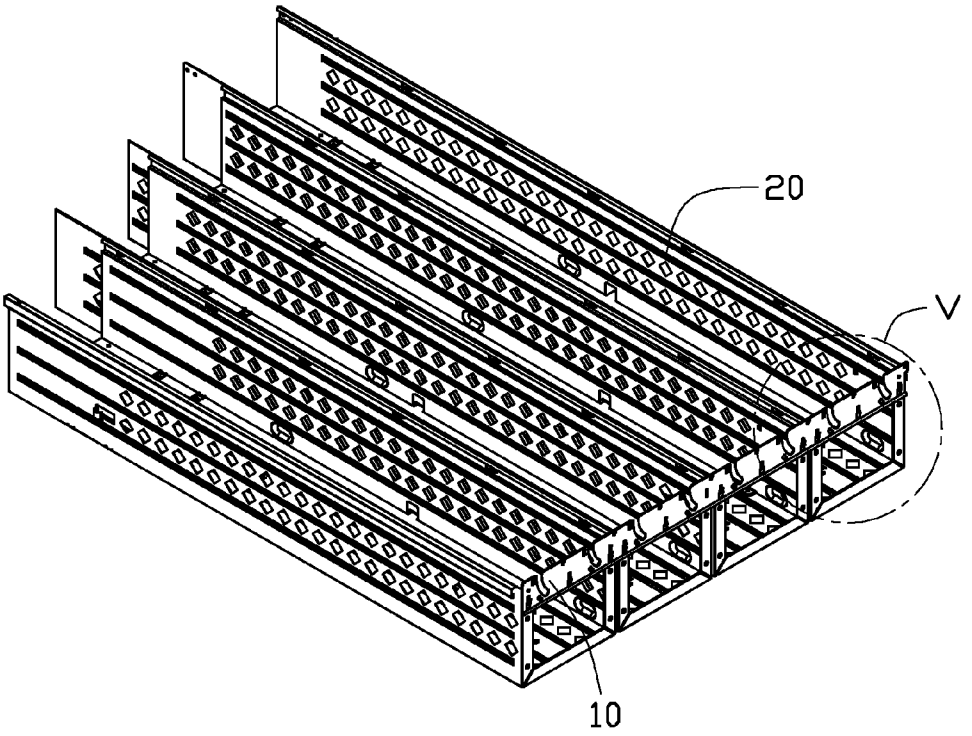
Publication Classification

(51) **Int. Cl.**
A47F 1/04 (2006.01)

(52) **U.S. Cl.**
CPC ***A47F 1/04*** (2013.01)
USPC **211/49.1**

(57) **ABSTRACT**

A mounting apparatus for the storage of merchandise in a vending machine includes a base plate, and a number of goods channels for mounting on the base plate. The base plate defines two first slots. Each of the two first slots includes a first opening and a second opening. Each of the goods channels includes a first hook and a second hook and a number of complementary openings and slots to allow each channel to be secured on the base plate against both horizontal and vertical movement, without the use of screws or rivets.



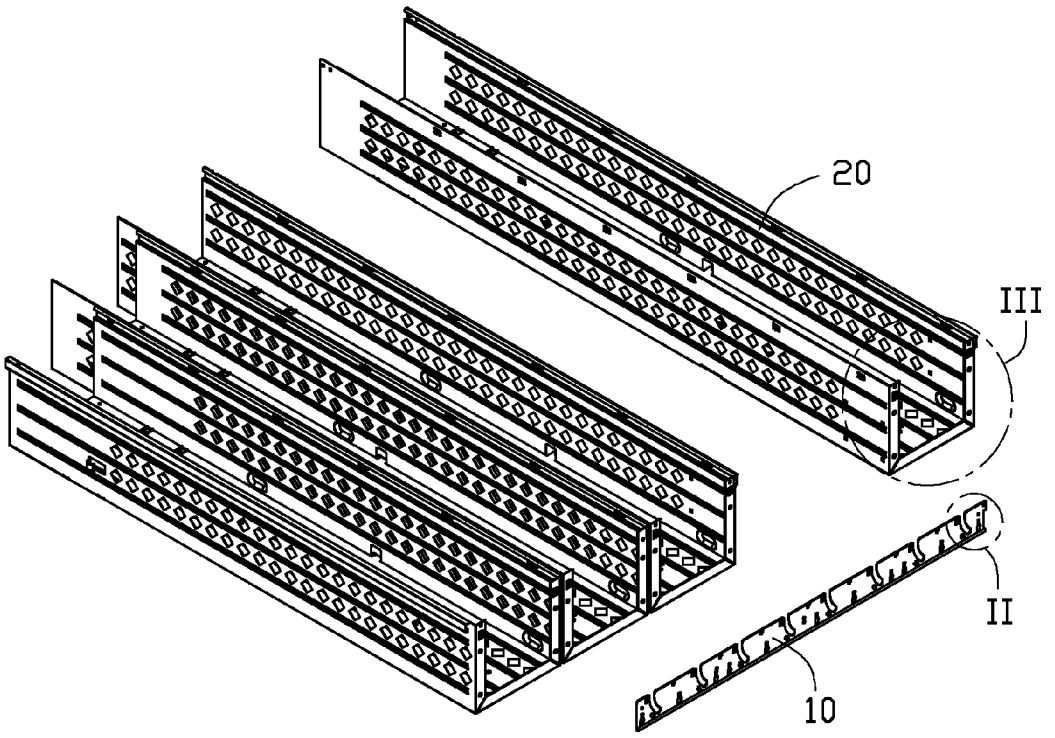


FIG. 1

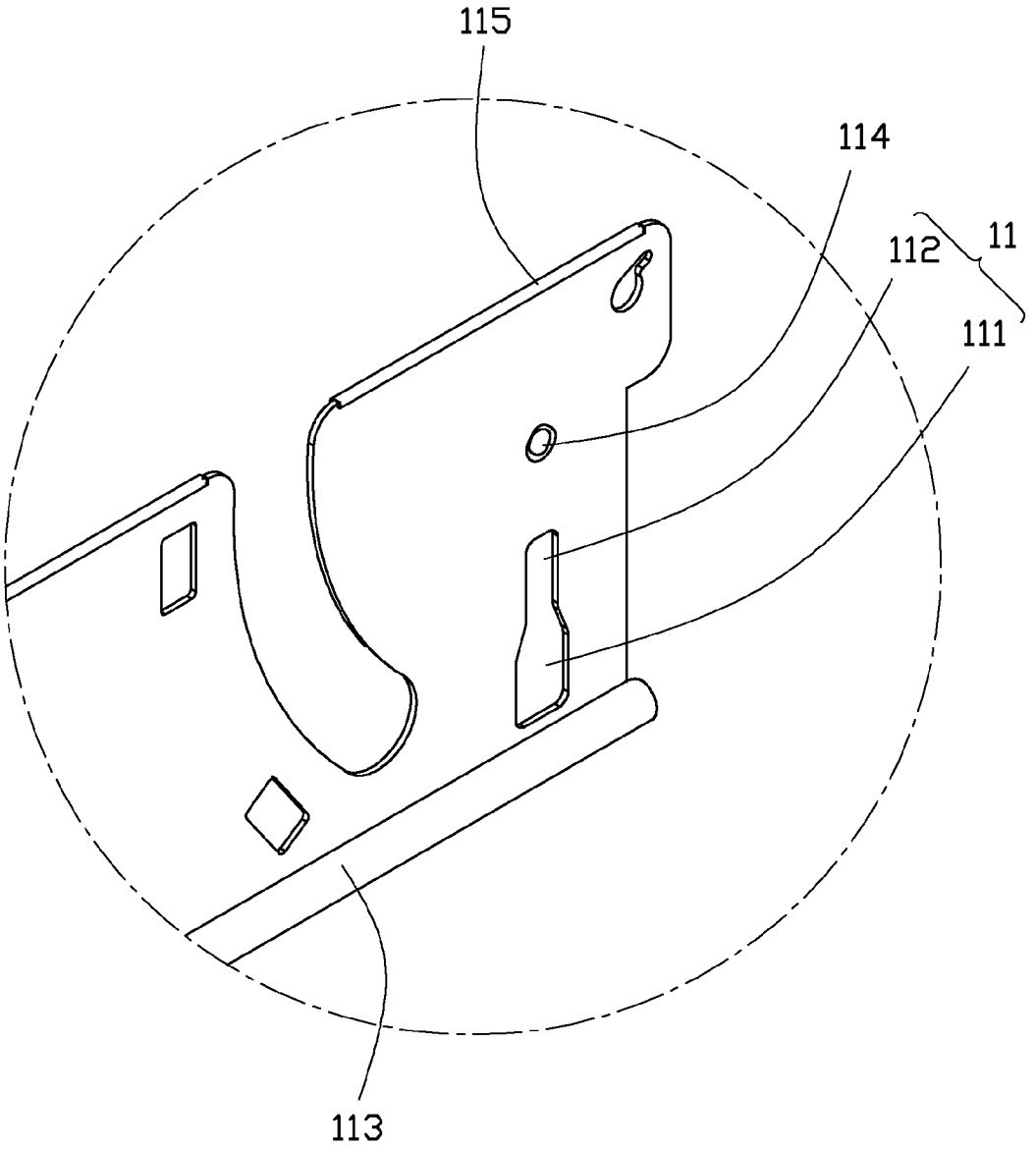


FIG. 2

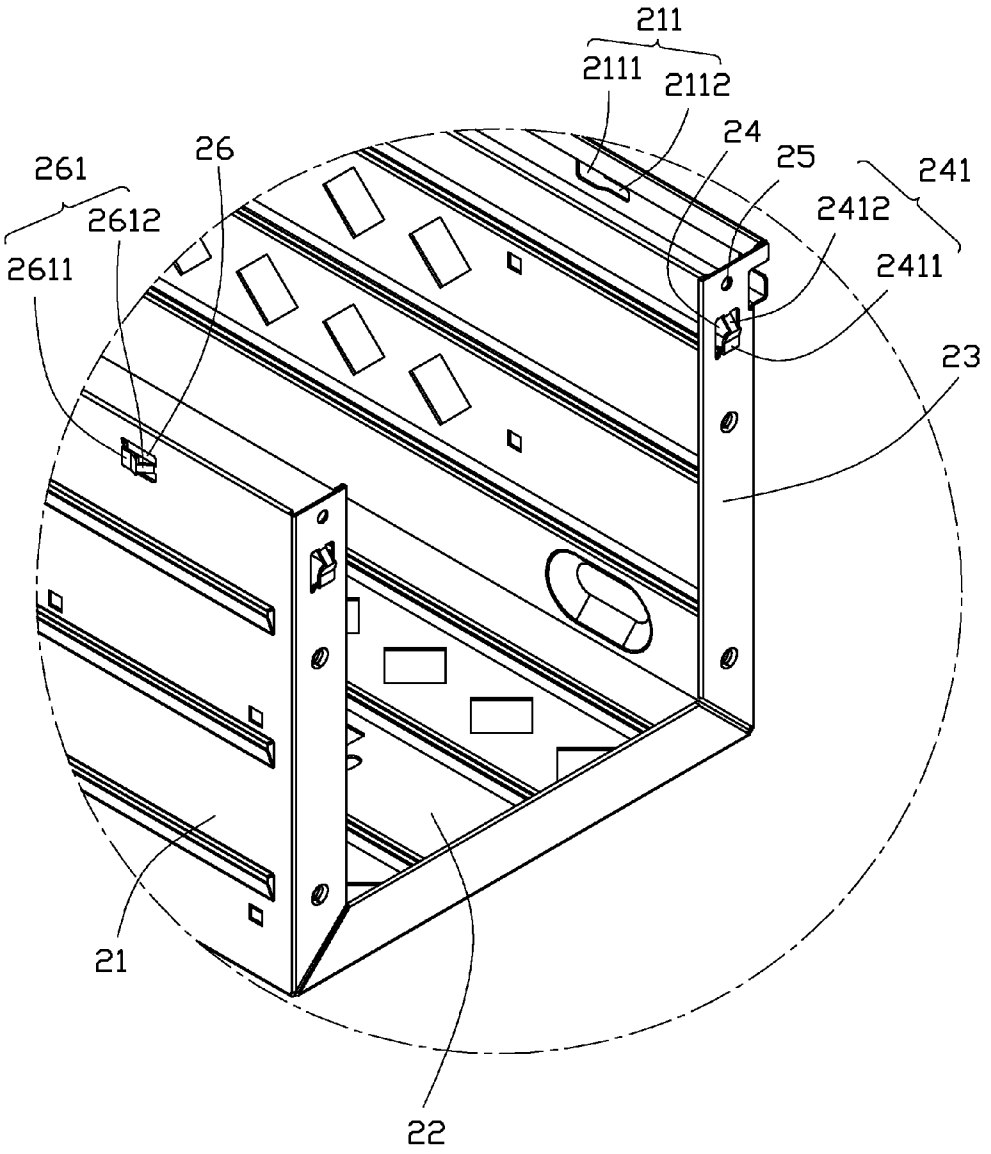


FIG. 3

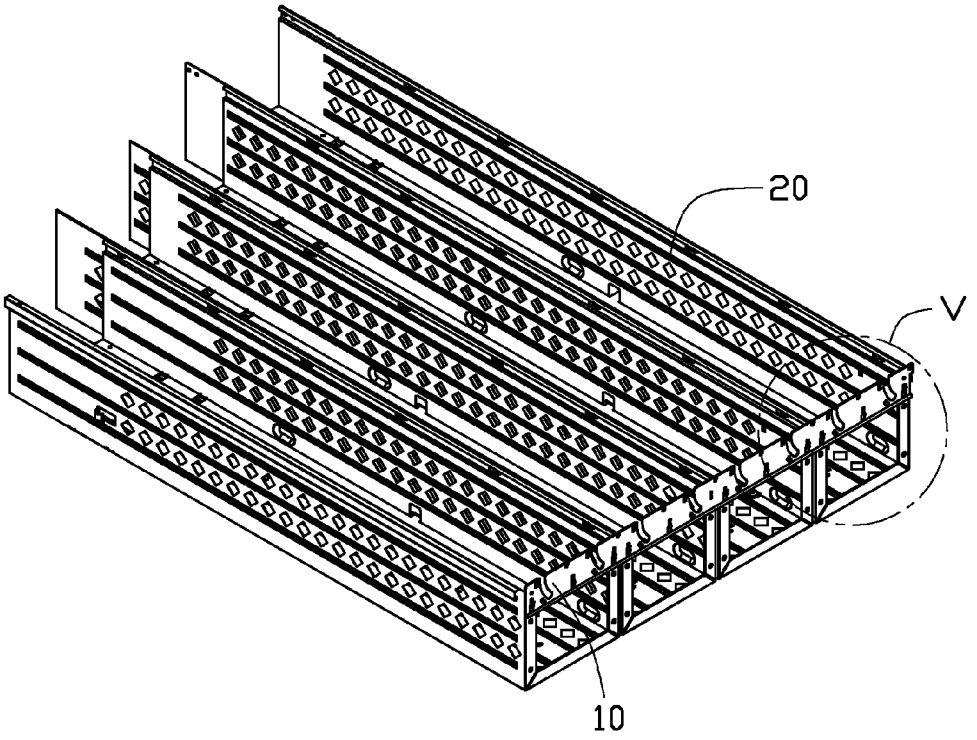


FIG. 4

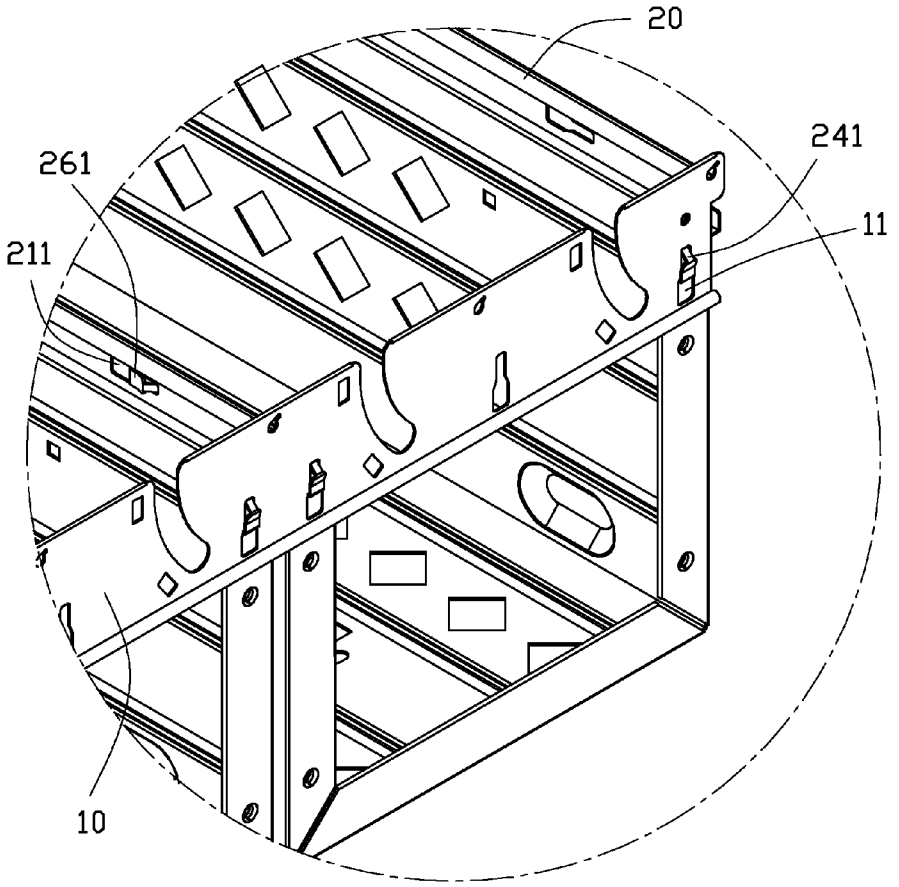


FIG. 5

MOUNTING APPARATUS FOR GOODS CHANNEL

BACKGROUND

[0001] 1. Technical Field

[0002] The present disclosure relates to a mounting apparatus for goods channels in a vending machine.

[0003] 2. Description of Related Art

[0004] Vending machines have goods channels for accommodating goods for sale. The goods channels are fixed on a base plate by rivets or screws in a typical vending machine. The processes to attach the goods channels to the vending machine may be laborious and inefficient.

[0005] Therefore, there is a need for improvement in the art.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006] Many aspects of the embodiments can be better understood with reference to the following drawings. The components in the drawings are not necessarily drawn to scale, the emphasis instead being placed upon clearly illustrating the principles of the embodiments. Moreover, in the drawings, like reference numerals designate corresponding parts throughout the several views.

[0007] FIG. **1** is an isometric, exploded view of an embodiment of a mounting apparatus for goods channels.

[0008] FIG. **2** is an enlarged view of a circled portion II of FIG. **1**.

[0009] FIG. **3** is an enlarged view of a circled portion III of FIG. **1**.

[0010] FIG. **4** is an assembled view of the mounting apparatus for goods channel of FIG. **1**.

[0011] FIG. **5** is an enlarged view of a circled portion V of FIG. **4**.

DETAILED DESCRIPTION

[0012] The disclosure is illustrated by way of example and not by way of limitation in the figures of the accompanying drawings in which like references indicate similar elements. It should be noted that references to "an" or "one" embodiment in this disclosure are not necessarily to the same embodiment, and such references mean "at least one."

[0013] FIG. **1** shows a mounting apparatus for goods channel includes a base plate **10** and a plurality of goods channels **20** mounted on the base plate **10**.

[0014] FIGS. **2** and **3** show the base plate **10** defining a plurality of first slots **11**. Each of the plurality of first slots **11** includes a first opening **111** and a second opening **112** communicating with the first opening **111**. A first bending portion **113** extends upwards from a bottom edge of the base plate **10**. Two round protruding portions **114** protrude from the base plate **10**. A second bending portion **115** extends downwards from a top edge of the base plate **10**. In one embodiment, a width of the first opening **111** is greater than a width of the second opening **112**.

[0015] Each of the plurality of goods channels **20** includes two parallel side plates **21** and a connecting plate **22** connecting the two side plates **21**. A bending tab **23** perpendicularly extends to an inner space of the goods channel **20** from a top edge of each of the two side plates **21**. A rectangular third opening **24** is defined in each bending tab **23**. A first hook **241** is formed in each third opening **24**. Each first hook **241** includes a first bending bracket **2411** and a second bending bracket **2412** extending from two opposite edges of the third opening **24**. The first bending bracket **2411** and the second bending bracket **2412** are connected to each other. A round through hole **25** is defined in each bending tab **23**.

[0016] In one embodiment, a width of the first bending bracket **2411** is greater than a width of the second bending bracket **2412**. The width of the first bending bracket **2411** is less than a width of the first opening **111**. The width of the first bending bracket **2411** is greater than a width of the second opening **112**. A width of the second bending bracket **2412** is equal to the width of the second opening **112**. A diameter of the protruding portion **114** is slightly greater than a diameter of the through hole **25**.

[0017] A fourth opening **26** is defined in one of the two side plates **21** of each goods channel **20**. A second hook **261** is formed in each fourth opening **26**. Each second hook **261** includes a third bending bracket **2611** and a fourth bending bracket **2612** extending from two opposite edges of the fourth opening **26**. The third bending bracket **2611** and the fourth bending bracket **2612** are connected to each other. A second slot **211** is defined in another of the two side plates **21** of each goods channel **20**. Each second slot **211** includes a fifth opening **2111** and a sixth opening **2112** communicating with the fifth opening **2111**.

[0018] In one embodiment, a width of the third bending bracket **2611** is greater than a width of the fourth bending bracket **2612**. The width of the third bending bracket **2611** is less than a width of the fifth opening **2111**. The width of the third bending bracket **2611** is greater than a width of the sixth opening **2112**. The width of the fourth bending bracket **2612** is equal to the width of the sixth opening **2112**.

[0019] FIGS. **1** to **5** show assembly, in which the second hook **261** of a goods channel **20** is aligned with the second slot **211** of an adjacent goods channel **20**. The third bending bracket **2611** passes through the fifth opening **2111** and slides into the sixth opening **2112** from the fifth opening **2111**, to prevent the two adjacent goods channels **20** moving in a horizontal direction. The base plate **10** is moved toward a top of the two adjacent goods channels **20**. The first bending bracket **2411** passes through the first opening **111** and slides into the second opening **112** from the first opening **111**. The protruding portion **114** passes through the through hole **25** to prevent the two adjacent goods channels **20** moving in a vertical direction on the base plate **10**. The goods channels **20** are mounted on the base plate **10**.

[0020] To disassemble, the base plate **10** is lifted up from the goods channels **20** to disengage the protruding portion **114** and the through hole **25**. The base plate **10** is pulled outwards to slide the first bending bracket **2411** into the first opening **111** from the second opening **112**. The base plate **10** is lifted up to be detached from the goods channels **20**. Two adjacent goods channels **20** are moved relative to each other to slide the third bending bracket **2611** in the fifth opening **2111** from the sixth opening **2112**. The adjacent goods channels **20** are thus detached from each other.

[0021] Even though numerous characteristics and advantages of the present disclosure have been set forth in the foregoing description, together with details of the structure and function of the disclosure, the disclosure is illustrative only, and changes may be made in detail, especially in the matters of shape, size, and the arrangement of parts within the principles of the disclosure to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed.

What is claimed is:

1. A mounting apparatus for goods channels, comprising:

a base plate defining two first slots; wherein each of the two first slots comprises a first opening and a second opening communicating with the first opening; and

a first goods channel and a second goods channel mounted on the base plate; wherein each of the first goods channel and the second goods channel defines a third opening and a fourth opening; a first hook is formed in the third opening; a second hook is formed in the fourth opening; a second slot is defined in the second goods channel; the second slot comprises a fifth opening and a sixth opening communicating with the fifth opening; the first goods channel and the second goods channel are prevented from moving in a vertical direction on the base plate by the first hook passing through the first opening and sliding in the second opening from the first opening; and the first goods channel and the second goods channel are prevented from moving in a horizontal direction by the second hook passing through the fifth opening and sliding in the sixth opening from the fifth opening.

2. The mounting apparatus of claim **1**, wherein two protruding portions protrude from the base plate; a through hole is defined in each of the first goods channel and the second goods channel; and each of the two protruding portion passes through each of the through holes to mount the first goods channel and the second goods channel on the base plate.

3. The mounting apparatus of claim **2**, wherein a diameter of the protruding portion is slightly greater than a diameter of the through hole.

4. The mounting apparatus of claim **1**, wherein the first hook comprises a first bending bracket and a second bending bracket extending from two opposite edges of the third opening; and the first bending bracket and the second bending bracket are connected to each other.

5. The mounting apparatus of claim **4**, wherein a width of the first bending bracket is greater than a width of the second bending bracket.

6. The mounting apparatus of claim **5**, wherein the width of the first bending bracket is less than a width of the first opening; the width of the first bending bracket is greater than a width of the second opening; and a width of the second bending bracket is equal to the width of the second opening.

7. The mounting apparatus of claim **1**, wherein the second hook comprises a third bending bracket and a fourth bending bracket extending from two opposite edges of the fourth opening; and the third bending bracket and the fourth bending bracket are connected to each other.

8. The mounting apparatus of claim **7**, wherein a width of the third bending bracket is greater than a width of the fourth bending bracket.

9. The mounting apparatus of claim **8**, wherein the width of the third bending bracket is less than the width of the fifth opening; the width of the third bending bracket is greater than a width of the sixth opening; and the width of the fourth bending bracket is equal to the width of the sixth opening.

10. A mounting apparatus for goods channels, comprising:

a base plate defining two first slots; wherein each of the two first slots comprises a first opening and a second opening communicating with the first opening; two protruding portions protrude from the base plate; and

a first goods channel and a second goods channel mounted on the base plate; wherein each of the first goods channel and the second goods channel defines a third opening, a fourth opening, and a through hole; a first hook is formed in the third opening; a second hook is formed in the fourth opening; a second slot is defined in the second goods channel; the second slot comprises a fifth opening and a sixth opening communicating with the fifth opening; the first hook passes through the first opening and slides in the second opening from the first opening, the protruding portion passes through the through hole to prevent the first goods channel and the second goods channel from moving in a vertical direction on the base plate; and the second hook passes through the fifth opening and slides in the sixth opening from the fifth opening, to prevent the first goods channel and the second goods channel from moving in a horizontal direction.

11. The mounting apparatus of claim **10**, wherein a diameter of the protruding portion is slightly greater than a diameter of the through hole.

12. The mounting apparatus of claim **10**, wherein the first hook comprises a first bending bracket and a second bending bracket extending from two opposite edges of the third opening; and the first bending bracket and the second bending bracket are connected to each other.

13. The mounting apparatus of claim **12**, wherein a width of the first bending bracket is greater than a width of the second bending bracket.

14. The mounting apparatus of claim **13**, wherein the width of the first bending bracket is less than a width of the first opening; the width of the first bending bracket is greater than a width of the second opening; and a width of the second bending bracket is equal to the width of the second opening.

15. The mounting apparatus of claim **10**, wherein the second hook comprises a third bending bracket and a fourth bending bracket extending from two opposite edges of the fourth opening; and the third bending bracket and the fourth bending bracket are connected to each other.

16. The mounting apparatus of claim **15**, wherein a width of the third bending bracket is greater than a width of the fourth bending bracket.

17. The mounting apparatus of claim **16**, wherein the width of the third bending bracket is less than the width of the fifth opening; the width of the third bending bracket is greater than a width of the sixth opening; and the width of the fourth bending bracket is equal to the width of the sixth opening.

* * * * *