A bracket supporting apparatus includes a cabinet body and a supporting bracket slidably received in the cabinet body. The supporting bracket includes a base plate and a back plate extending from the base plate. A first slot is defined in the base plate. A second slot is defined in the back plate. A separating plate is mounted on the base plate.

The separating plate comprises a hook, an inserting tab and a second flange. A resisting bracket diagonally extends from the inserting tab. When the hook is passed through the first slot and resists against a bottom of the base plate, the second flange resists against a top of the base plate. When the inserting tab is moved into the second slot, the resisting bracket resists against the back plate so the separating plate can be mounted on the supporting bracket.
BRACKET SUPPORTING APPARATUS OF VENDING MACHINE

BACKGROUND

1. Technical Field
The present disclosure relates to a bracket supporting apparatus in a vending machine.

2. Description of Related Art
Vending machines have supporting brackets including a number of product channels for accommodating products for sale. A number of separating plates are mounted to the supporting brackets to separate the supporting brackets into the number of product channels. However, the separating plates are fixed to the supporting brackets by rivets or screws. Fixing the separating plates to the vending machines may be laborious and time consuming.

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

BRIEF DESCRIPTION OF THE DRAWINGS

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.

FIG. 1 is an exploded view of an embodiment of a bracket supporting apparatus including a number of sliding members, a supporting bracket, a separating plate, a guiding member, and a strength member.

FIG. 2 is an isometric view of the sliding member of FIG. 1.

FIG. 3 is an exploded view of the supporting bracket, the separating plate, the guiding member, and the strength plate of FIG. 1.

FIG. 4 is an isometric view of the separating plate of FIG. 3.

FIG. 5 is an isometric view of the guiding member of FIG. 3.

FIG. 6 is an assembled view of the bracket supporting apparatus of FIG. 1.

DETAILED DESCRIPTION

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.”

FIGS. 1 to 2 show a bracket supporting apparatus of the embodiment. The bracket supporting apparatus includes a cabinet body 10 and a supporting bracket 20 slidably received in the cabinet body 10.

The cabinet body 10 includes two side plates 11 which are substantially parallel to each other. A number of sliding members 12 are mounted on each of the two side plates 11. The sliding members 12 are substantially parallel to each other. Two first flanges 121 substantially perpendicularly extend from two edges of each of the sliding members 12. A sliding slot 122 is defined between the two first flanges 121 on each of the sliding members 12. A stopping block 123 is located on each of the sliding members 12 adjacent to an outside of the cabinet body 10. In one embodiment, a distance between the two first flanges 121 is substantially equal to a diameter of the stopping block 123.

FIGS. 3 to 5 show the supporting bracket 20 includes a base plate 21. Two side walls 22 substantially perpendicularly extend from two edges of the base plate 21. A back plate 23 substantially perpendicularly extending from a front of the base plate 21. The back plate 23 is connected between the two side walls 22. A number of first slots 211 are defined in the base plate 21. The first slots 211 are substantially parallel to each other. A number of second slots 213 are defined in the back plate 23.

A number of separating plates 30 are separately mounted on the base plate 21. The separating plates 30 are substantially parallel to each other. Each of the separating plates 30 includes a bracket body 31 and an inserting tab 32 extending from the bracket body 31. A rectangular cutout 321 is defined at a top of the inserting tab 32. A resisting bracket 322 diagonally extends from a side edge of the cutout 321 on the inserting tab 32. In one embodiment, a length of the inserting tab 32 is substantially less than a length of each of the second slots 231. The resisting bracket 322 is elastically deformable.

A second flange 33 substantially perpendicularly extends from a bottom edge of the bracket body 31. Two hooks 34 are located on two sides of the second flange 33 on the bracket body 31. Each of the two hooks 34 includes a connecting portion 341 substantially perpendicularly extending from the bottom edge of the bracket body 31. A locking portion 342 substantially perpendicularly extends from the connecting portion 341. In one embodiment, a length of the connecting portion 341 is substantially less than a length of the locking portion 342. A length of the locking portion 342 is substantially equal to a length of each of the first slots 211.

A guiding member 40 is mounted on the base plate 21 adjacent to each of the two side plates 11. The guiding member 40 includes a connecting bracket 41. Two rectangular openings 411 are defined in the connecting bracket 41. A restricting bracket 412 substantially perpendicularly extends from a side edge of the corresponding opening 411 on the connecting bracket 41. A fixing bracket 42 substantially perpendicularly extends from a top edge of the connecting bracket 41. The fixing bracket 42 is mounted on the base plate 21 by riveting.

A mounting bracket 43 substantially perpendicularly extends from a bottom edge of the connecting bracket 41. A sliding roller 50 is mounted on a front of the connecting bracket 41. A stopping bracket 60 is mounted on the connecting bracket 41 adjacent to the sliding roller 50. The stopping bracket 60 is mounted on the connecting bracket 41 by riveting. A strengthening plate 70 is mounted on the base plate 21 between two guiding members 40. The strengthening plate 70 is mounted on the two guiding members 40 by riveting.

In one embodiment, a diameter of the sliding roller 50 is substantially equal to a distance between the two first flanges 121. A distance between two restricting brackets 412 is substantially equal to a width of the strengthening plate 70. A distance between the fixing bracket 42 and the mounting bracket 43 is substantially equal to a height of the strengthening plate 70.

FIGS. 1 to 6 show that in assembly, the strengthening plate 70 is located between two restricting brackets 412 on each of the two guiding members 40. The strengthening plate 70 is riveted on the mounting bracket 43 on each of the two guiding members 40. The two guiding members 40 and the
strengthening plate 70 are located at a bottom of the base plate 21. The fixing bracket 42 on each of the two guiding members 40 is riveted on the base plate 21. The separating plates 30 are located on the base plate 21. The hooks 34 pass through the corresponding first slots 211 until the second flange 33 resists against a top of the base plate 21. The inserting tab 32 is aligned to the corresponding second slot 231.

[0023] The bracket body 31 is pushed on the base plate 21. The inserting tab 32 moves in the corresponding second slot 231 until the resisting bracket 322 resists against the back plate 23. The connecting portion 341 is received in the corresponding first slot 211 to prevent the corresponding separating plate 30 from moving forward or backward on the base plate 21. The locking portion 342 resists against the bottom of the base plate 21 to prevent the corresponding separating plate 30 from moving upward or downward on the base plate 21. The supporting bracket 20 is slid in the cabinet body 10. The sliding roller 50 slides in the sliding slot 122 between the two flanges 121.

[0024] In use, when products are positioned on the supporting bracket 20, the base plate 21 is pulled out of the cabinet body 10. The sliding roller 50 slides in the connecting sliding slot 122. The supporting bracket 20 is slid out of the cabinet body 10. The stopping bracket 60 resists against the corresponding stopping block 123 to prevent the supporting bracket 20 from disengaging from the cabinet body 10.

[0025] 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 bracket supporting apparatus, comprising:
   a cabinet body; and
   a supporting bracket slidably received in the cabinet body;
   the supporting bracket comprising a base plate and a back plate extending from the base plate; wherein a first slot is defined in the base plate; a second slot is defined in the back plate; a separating plate is mounted on the base plate; the separating plate comprises a hook, an inserting tab and a second flange; a resisting bracket diagonally extending from the inserting tab;
   wherein when the hook is passed through the first slot and resists against a bottom of the base plate, the second flange resists against a top of the base plate; and when the inserting tab is moved into the second slot, the resisting bracket resists against the back plate so the separating plate can be mounted on the supporting bracket.

2. The bracket supporting apparatus of claim 1, wherein the separating plate comprises a bracket body; the inserting tab extends from the bracket body; a cutout is defined at a top of the inserting tab; and the resisting bracket diagonally extends from a side edge of the cutout.

3. The bracket supporting apparatus of claim 2, wherein the second flange substantially perpendicularly extends from a bottom edge of the bracket body; the hook is located on one side of the second flange; the hook comprises a connecting portion substantially perpendicularly extending from the bottom edge of the bracket body; the locking portion substantially perpendicularly extends from the connecting portion; the connecting portion is received in the first slot when the hook is passed through the first slot; and the locking portion resists against the bottom of the base plate.

4. The bracket supporting apparatus of claim 3, wherein a length of the connecting portion is substantially less than a length of the locking portion; the length of the locking portion is substantially equal to a length of the first slot; a length of the inserting tab is substantially less than a length of the second slot; and the resisting bracket is elastically deformable.

5. The bracket supporting apparatus of claim 4, wherein two guiding members are mounted on the base plate; each of the two guiding members comprises a connecting bracket; two openings are defined in the connecting bracket; a resisting bracket substantially perpendicularly extending from a side edge of each of the two openings on the connecting bracket; a fixing bracket substantially perpendicularly extending from a bottom edge of the connecting bracket; a strengthening plate is mounted on the mounting bracket between two restricting brackets; and the fixing bracket is mounted on the base plate.

6. The bracket supporting apparatus of claim 5, wherein a distance between two restricting brackets is substantially equal to a width of the strengthening plate; and a distance between the fixing bracket and the mounting bracket is substantially equal to a height of the strengthening plate.

7. The bracket supporting apparatus of claim 6, wherein a sliding roller is mounted on the connecting bracket; a stopping bracket is mounted on the connecting bracket adjacent to the sliding roller; two sliding members are mounted on the cabinet body; two first flanges substantially perpendicularly extend from two edges of each of the two sliding members; a sliding slot is defined in each of the two sliding members between the two first flanges; a stopping block is located on each of the two sliding members; and the sliding roller slides in the sliding slot between the two first flanges.

8. The bracket supporting apparatus of claim 7, wherein a distance between the two first flanges is substantially equal to a diameter of the stopping block; and a diameter of the sliding roller is substantially equal to the distance between the two first flanges.

9. A bracket supporting apparatus, comprising:
   a cabinet body; and
   a supporting bracket slidably received in the cabinet body;
   the supporting bracket comprising a base plate and a back plate extending from the base plate; wherein a first slot is defined in the base plate; a second slot is defined in the back plate; a separating plate is mounted on the base plate; the separating plate comprises a hook, an inserting tab and a second flange; a resisting bracket diagonally extending from the inserting tab;
   wherein when the hook is passed through the first slot and resists against a bottom of the base plate, the second flange resists against a top of the base plate; and when the inserting tab is moved into the second slot, the resisting bracket resists against the back plate so the separating plate can be mounted on the supporting bracket.

10. The bracket supporting apparatus of claim 9, wherein the separating plate comprises a bracket body; the inserting tab extends from the bracket body; a cutout is defined at a top of the inserting tab; and the resisting bracket diagonally extends from a side edge of the cutout.
11. The bracket supporting apparatus of claim 10, wherein the second flange substantially perpendicularly extends from a bottom edge of the bracket body; the hook is located on one side of the second flange; the hook comprises a connecting portion substantially perpendicularly extending from the bottom edge of the bracket body; a locking portion substantially perpendicularly extends from the connecting portion; the connecting portion resists against the first slot when the hook is passed through the first slot; and the locking portion resists against the bottom of the base plate.

12. The bracket supporting apparatus of claim 11, wherein a length of the connecting portion is substantially less than a length of the locking portion; the length of the locking portion is substantially equal to a length of the first slot; a length of the inserting tab is substantially less than a length of the second slot; and the resisting bracket is elastically deformable.

13. The bracket supporting apparatus of claim 12, wherein two guiding members are mounted on the base plate; each of the two guiding members comprises a connecting bracket; two openings are defined in the connecting bracket; a restricting bracket substantially perpendicularly extending from a side edge of each of the two openings on the connecting bracket; a fixing bracket substantially perpendicularly extending from a top edge of the connecting bracket; a mounting bracket substantially perpendicularly extending from a bottom edge of the connecting bracket; a strengthen plate is mounted on the mounting bracket between two restricting brackets; and the fixing bracket is mounted on the base plate.

14. The bracket supporting apparatus of claim 13, wherein a distance between two restricting brackets is substantially equal to a width of the strengthen plate; and a distance between the fixing bracket and the mounting bracket is substantially equal to a height of the strengthen plate.

15. The bracket supporting apparatus of claim 14, wherein a sliding roller is mounted on the connecting bracket; a stopping bracket is mounted on the connecting bracket adjacent to the sliding roller; two sliding members are mounted on the cabinet body; two first flanges substantially perpendicularly extend from two edges of each of the two sliding members; a sliding slot is defined in each of the two sliding members between the two first flanges on each of the two sliding members; a stopping block is located on each of the two sliding members; and the sliding roller slides in the sliding slot between the two first flanges.

16. The bracket supporting apparatus of claim 15, wherein a distance between the two first flanges is substantially equal to a diameter of the stopping block; and a diameter of the sliding roller is substantially equal to the distance between the two first flanges.

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