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(54) **SECTIONAL COMBINATION RACK**

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(57) **ABSTRACT**

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A sectional combination rack is composed of a standing post, at least one shelf holder, and at least one shelf. The standing post includes a plurality of axially spaced annular grooves each horizontally formed around outer circumference of the standing post. The at least one shelf holder is composed of a plurality of mated halves combined together, each of which has a flange formed at an inner side thereof. Each of the flanges can be engaged into the corresponding annular groove. The mated halves are arranged along the annular pieces respectively, each having at least one fastening portion axially extending along the standing post. The shelf is mounted to the shelf holder, having a plurality of fastened portions. The fastened portions can be engaged into the fastening portions respectively.

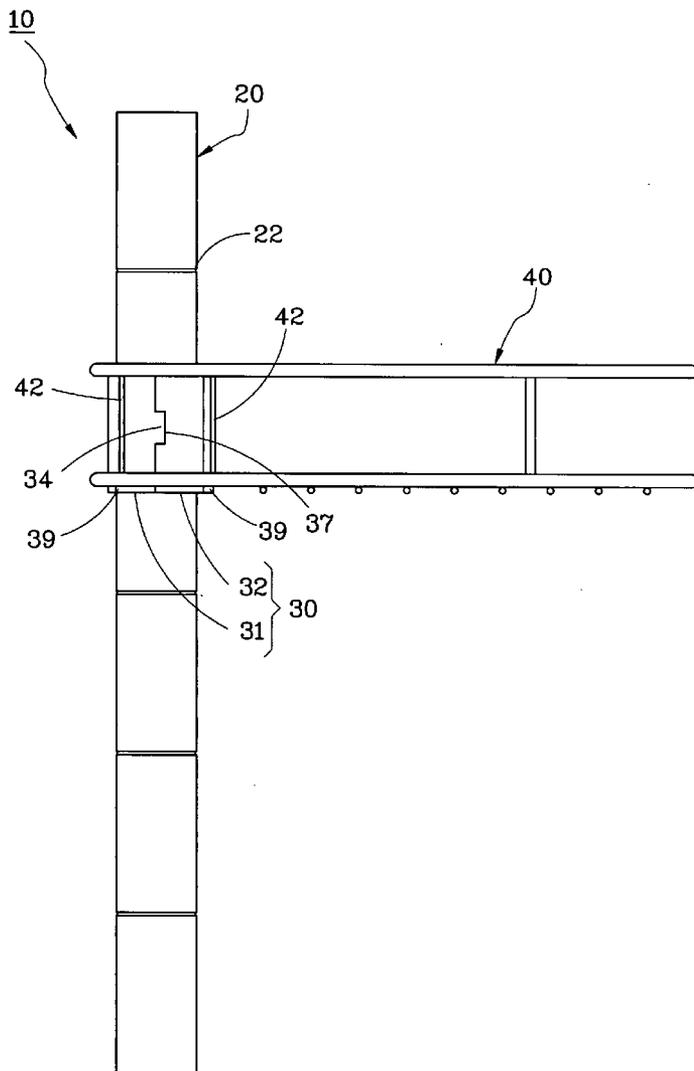
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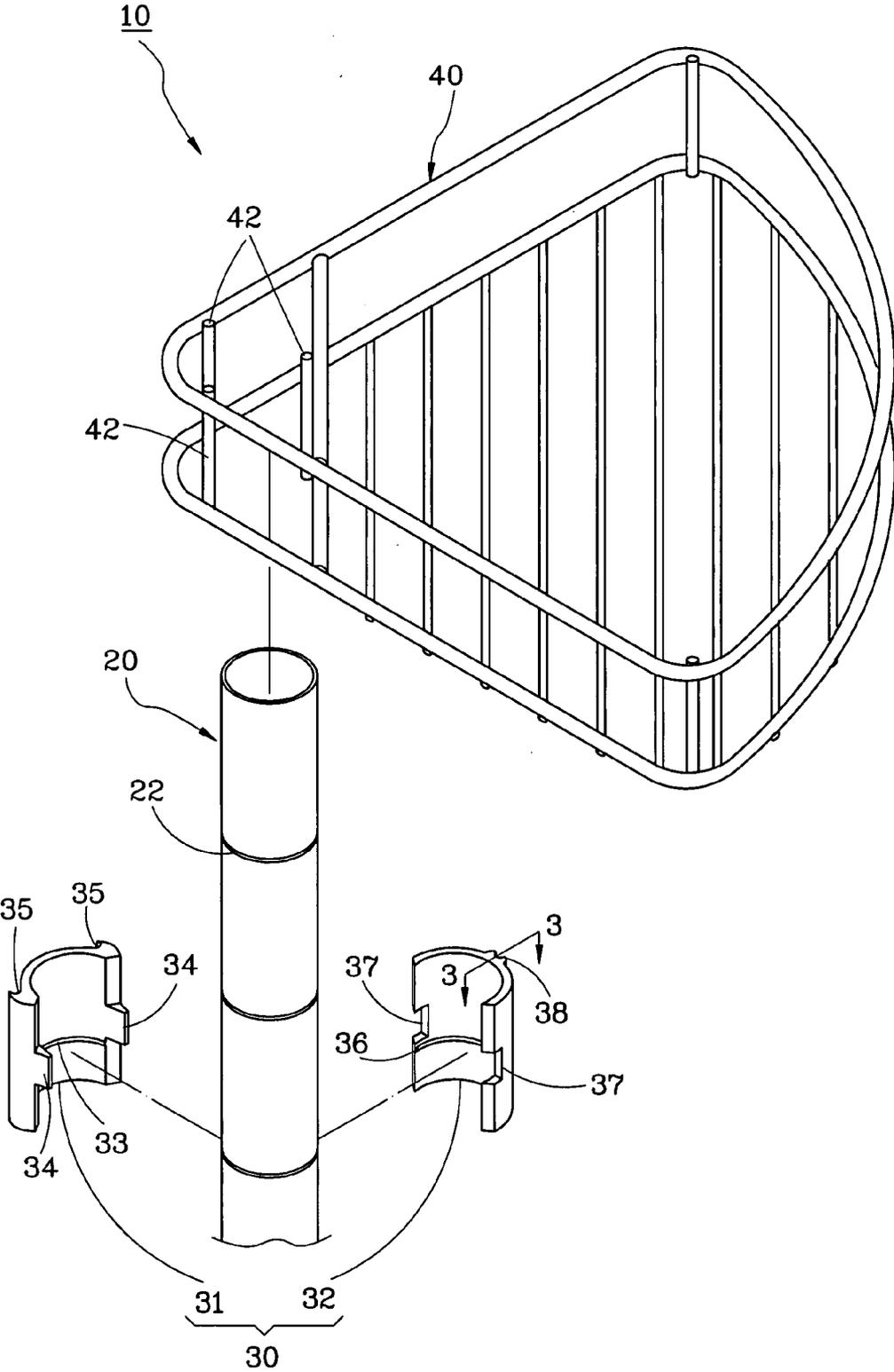


FIG. 1

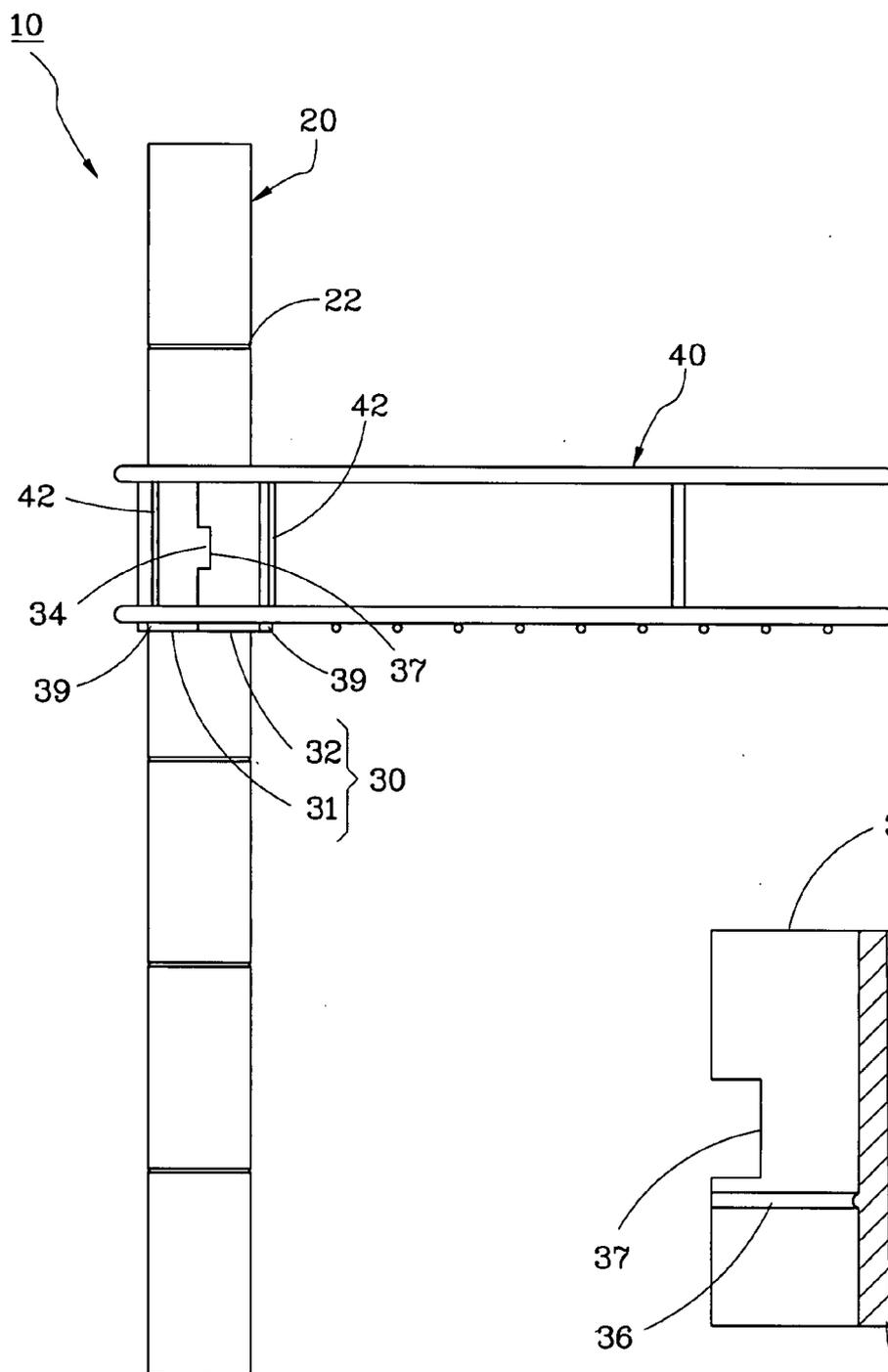


FIG. 2

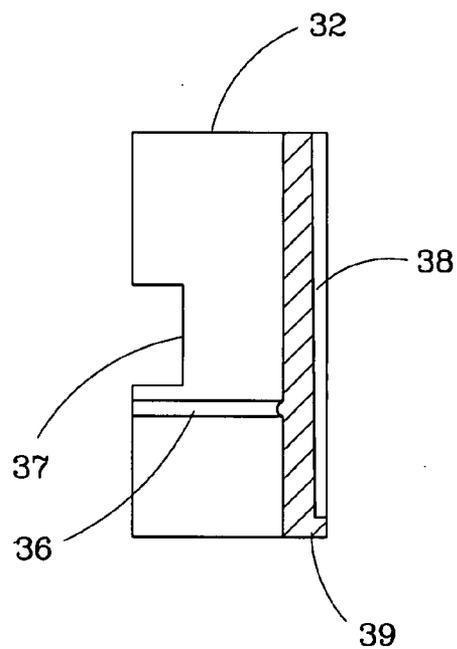


FIG. 3

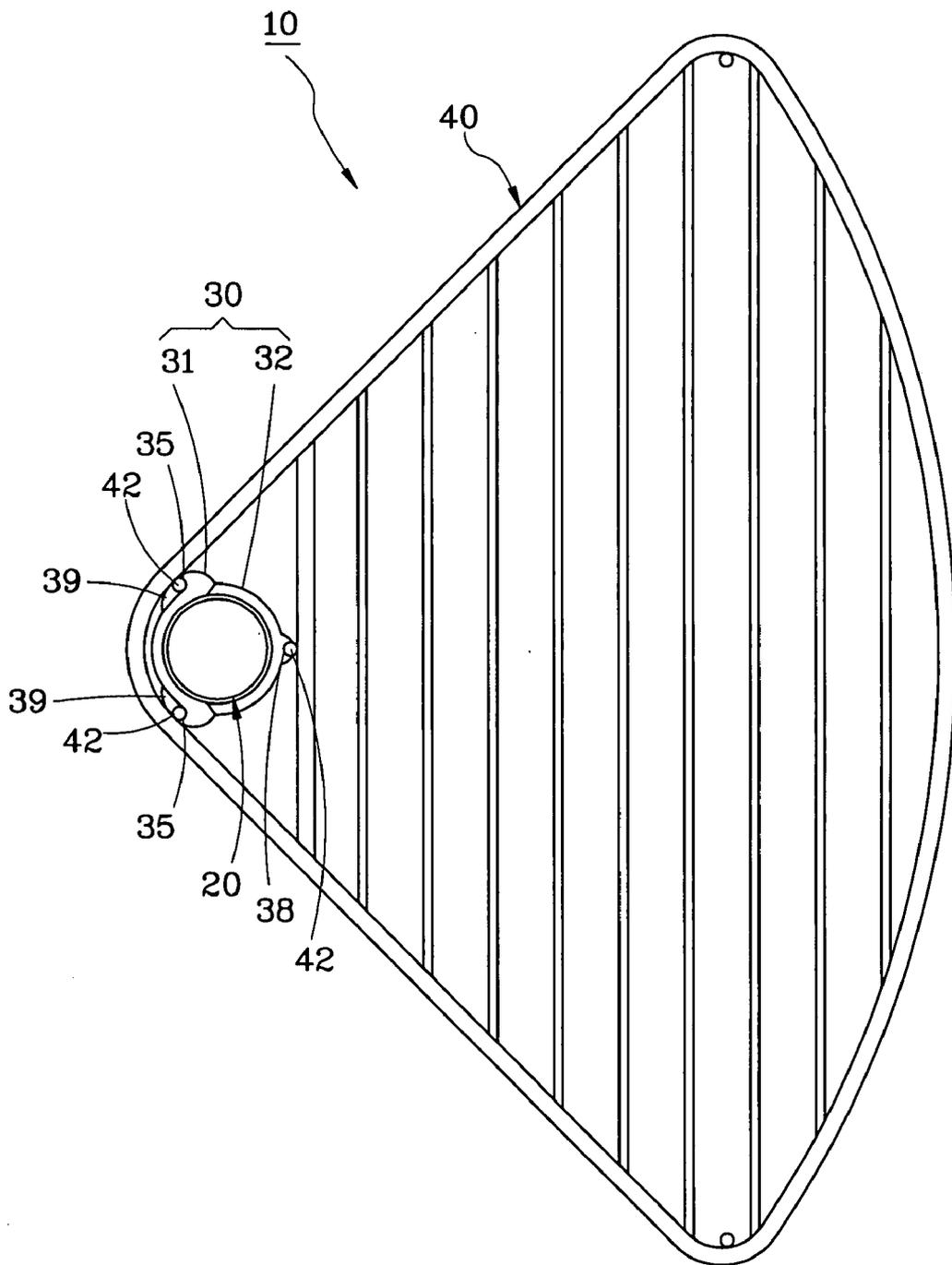


FIG. 4

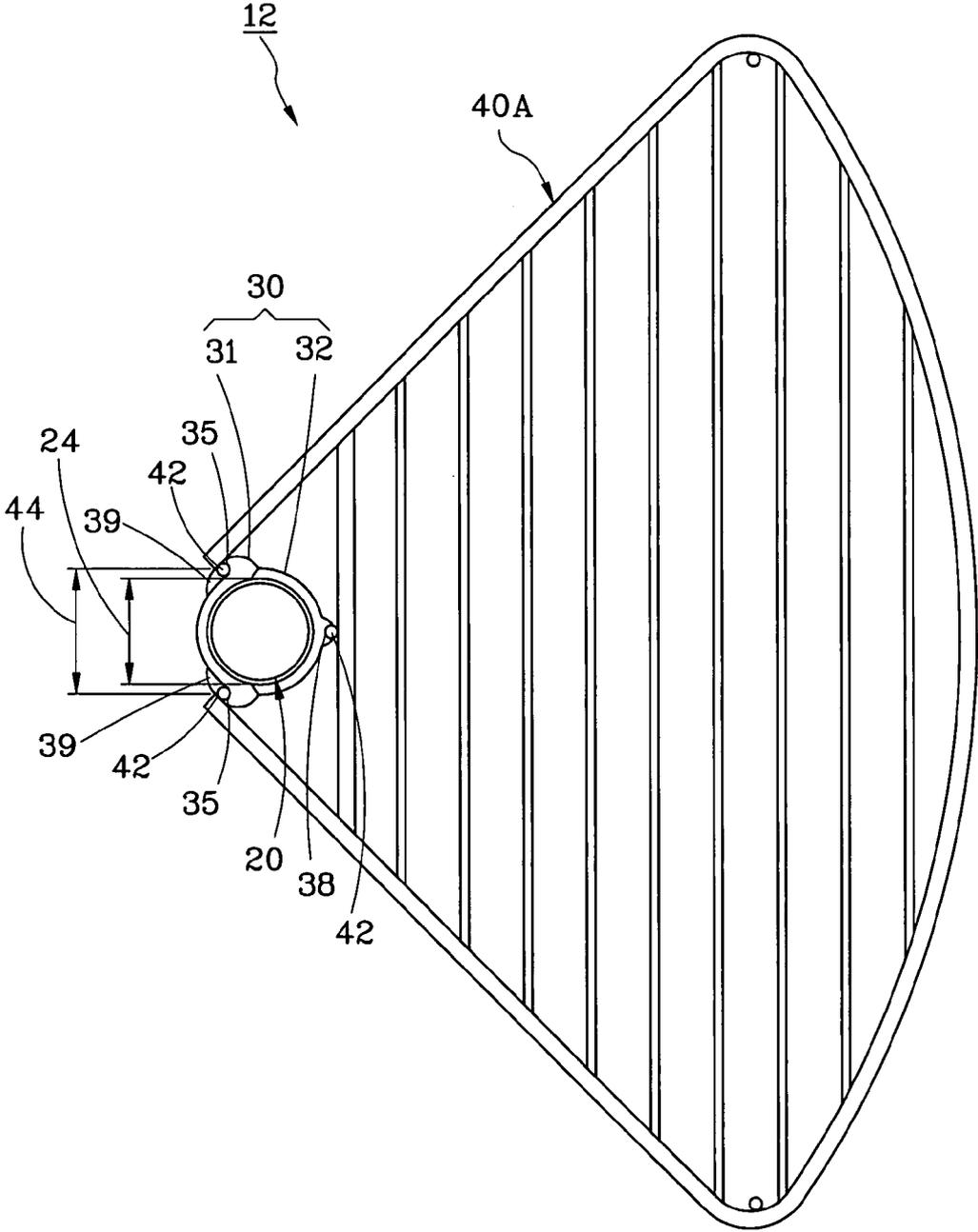


FIG. 5

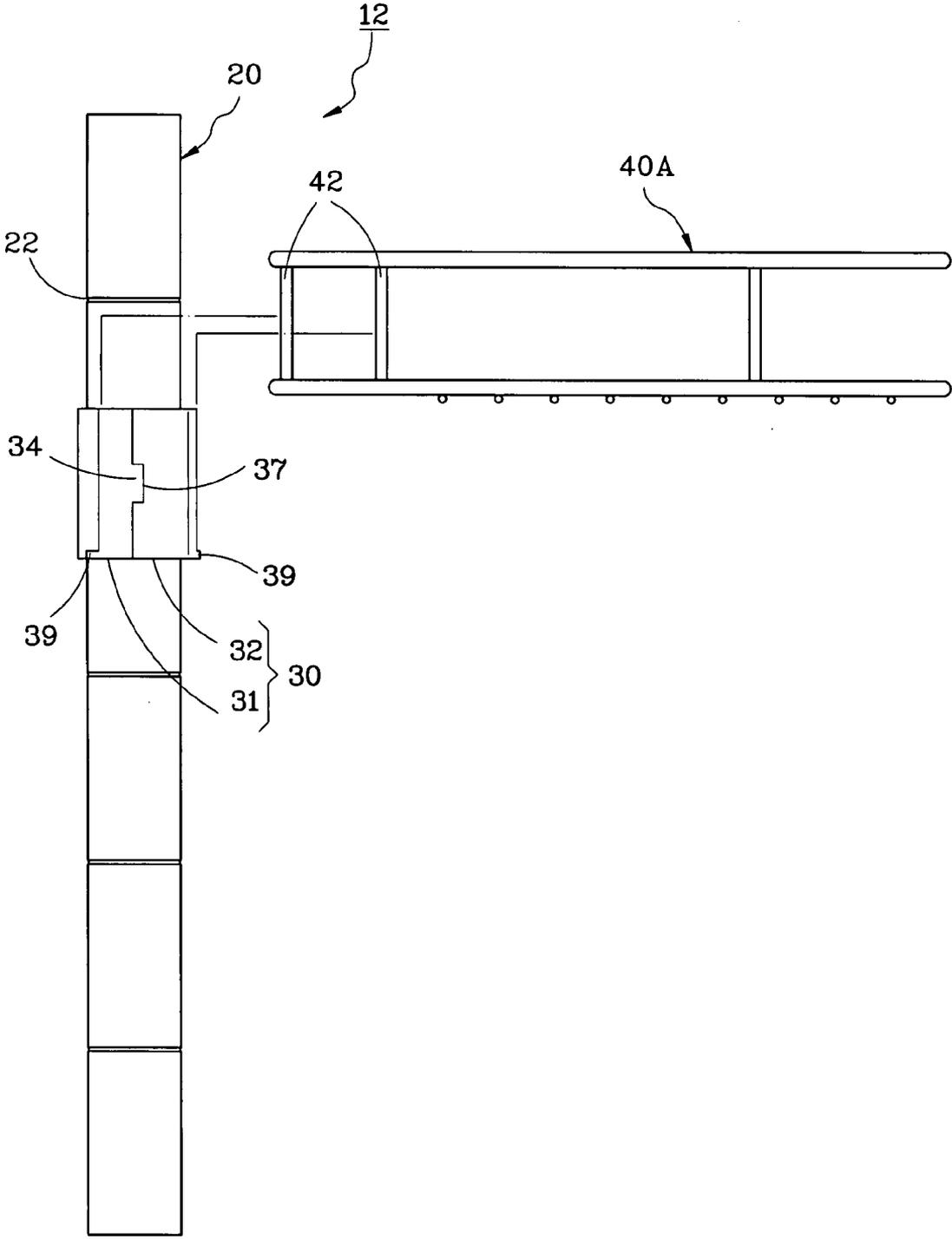


FIG. 6

SECTIONAL COMBINATION RACK

BACKGROUND OF THE INVENTION

[0001] 1. Field of the Invention

[0002] The present invention relates generally to combination racks, and more particularly, to a sectional combination rack.

[0003] 2. Description of the Related Art

[0004] As disclosed in Taiwan Patent Publication No. M303663, a conventional combination rack includes a post, a shelf holder mounted to the post, and a shelf mounted to the post and the shelf holder. The shelf holder is composed of a lower sleeve, an anti-run piece, and an upper sleeve. The upper and lower sleeves are interconnected to be fixed to the post. The anti-run piece is mounted to the lower sleeve and closely engages the post, for providing a friction and thus preventing the shelf holder from slipping along the post. An assembling portion is located outside the upper sleeve for mounting the shelf. In light of this, the combination rack can be disassembled and assembled.

[0005] However, the anti-run piece will deteriorate gradually after used for a while, such that the anti-run capability will be reduced to disable the shelf holder from firmly held but to enable the shelf holder to slip along the post, thus flawing the conventional combination rack for unfirm structure. Further, the shelf keeps pulling the shelf holder and will enable the upper and lower sleeves to become gradually disengaged from each other. In addition, since hooked to the shelf holder, the shelf is slightly forced upward to much tend to disengage from the shelf holder, thus flawing the conventional combination rack for imperfect positioning.

[0006] To improve the aforementioned drawbacks, a conventional shelf holder for a multiple-shelf rack, as disclosed in Taiwan Patent Early Publication No. 200642637, composed of a post, a connection holder mounted to the post, a shelf, and a sleeve mounted to the shelf was proposed. The shelf is sleeved onto the connection holder by means of the sleeve to prevent the shelf from disengagement from the post. However, the conventional shelf holder still has the drawback of inconvenient assembly because of too many components and complicated installation.

SUMMARY OF THE INVENTION

[0007] The primary objective of the present invention is to provide a sectional combination rack which is structurally simplified to have low production cost.

[0008] The foregoing objective of the present invention is attained by the sectional combination rack is composed of a standing post, at least one shelf holder, and at least one shelf. The standing post includes a plurality of axially spaced annular grooves each horizontally formed around outer circumference of the standing post. The at least one shelf holder is composed of a plurality of mated halves combined together, each of which has a flange formed at an inner side thereof. Each of the flanges can be engaged into the corresponding annular groove. The mated halves are arranged along the annular pieces respectively, each having at least one fastening portion axially extending along the standing post. The shelf is mounted to the shelf holder, having a plurality of fastened portions. The fastened portions can be engaged into the fastening portions respectively.

BRIEF DESCRIPTION OF THE DRAWINGS

[0009] FIG. 1 is an exploded view of a first preferred embodiment of the present invention.

[0010] FIG. 2 is a side view of the first preferred embodiment of the present invention.

[0011] FIG. 3 is a sectional view taken along a line 3-3 indicated in FIG. 1.

[0012] FIG. 4 is a top view of the first preferred embodiment of the present invention.

[0013] FIG. 5 is a top view of a second preferred embodiment of the present invention.

[0014] FIG. 6 is a side view of the second preferred embodiment of the present invention being assembled.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

[0015] Referring to FIGS. 1-4, a sectional combination rack 10 constructed according to a first preferred embodiment of the present invention is composed of a standing post 20, a shelf holder 30, and a shelf 40.

[0016] The standing post 20 includes a plurality of annular grooves 22 each horizontally formed around outer circumference thereof. The annular grooves 22 are arranged one by one along an imaginary longitudinal axis thereof, and each two adjacent annular grooves 22 are spaced from each other for a predetermined interval.

[0017] The shelf holder 30 is composed of an arched first mated half 31 and an arched second mated half 32, both of which are combined together. The first mated half 31 has a flange 33, two lugs 34, and two fastening portions 35. The flange 33 is located at an inner side of the first mated half 31 and each can be engaged into the corresponding annular groove 22. The two lugs 34 are located at two opposite sides of the first mated half 31. The two fastening portions 35 are located outside the first mated half 31, axially extending along the standing post 20. Each of the two fastening portions 35 is tapered, gradually shrinking from top to bottom. The second mated half 32 has a flange 36, two lugs 37, and a fastening portion 38. The flange 36 is located at an inner side of the second mated half 32 and each can be engaged into the annular groove 22. The two lugs 37 are located at two opposite sides of the second mated half 32 for engaging the two lugs 34 of the first mated half 31 to enable the shelf holder 30 to annularly wrap the standing post 20. The fastening portion 38 is located outside the second mated half 32, axially extending along the standing post 20. The fastening portion 38 is tapered, gradually shrinking from top to bottom. The two mated halves 31 and 32 further includes three stop portions formed at respective bottom ends of said fastening portions 35 and 38.

[0018] The shelf 40 is a basket, having a plurality of fastened portions 42. The fastened portions 42 are straight bars and can be engaged into the fastening portions 35 and 38 to enable the shelf 40 to be mounted to the shelf holder 30. The fastened portions 42 will become tight along with the shrinking fastening portions 35 and 38. When fully engaged into the fastening portions 35 and 38, the fastened portions 42 contact against the stop portions 39 to limit further movement of the fastened portions 42.

[0019] In light of the above-mentioned structure, when a user intends to assemble the rack 10, the user can do so according to the following steps.

[0020] A. First, adjust the locations of the first and second mated halves 31 and 32 to engage the flanges 33 and 36 into the corresponding annular grooves 22 respectively. Next, engage the lug 34 of the first mated half 31 into the recess 37 of the second mated half 32 to fasten the shelf holder 30 to the standing post 20 to be located as high as the user desires.

[0021] B. Second, align the fastened portions 42 of the shelf 40 with the fastening portions 35 and 38 and enable the fastened portions 42 to pass downward through the top side of the standing post 20 and to be held in the fastening portions 35 and 38. When the fastened portions 42 are being gradually held into the fastening portions 35 and 38, since the fastening portions 35 and 38 will become tight along the shrinking fastening portions 35 and 38, the fastened portions 42 are being gradually held by the shelf holder 30 to enable the flanges 33 and 36 to be securely engaged into the annular grooves 22. Accordingly, the present invention can structurally prevent the shelf 40 forced upward from easy disengagement.

[0022] C. When the fastened portions 42 are fully engaged into the fastening portions 35 and 38, the fastened portions 42 contact against the stop portions 39 to limit further movement of the fastened portions 42. In light of this, the user can accomplish the assembly of the rack 10.

[0023] In addition, the respective numbers of the shelf holder 30 and the shelf 40 are subject to the user's need to enable the rack 10 to be applicable to different environments. Referring to FIGS. 5 and 6, a sectional combination rack 12 constructed according to a second preferred embodiment of the present invention is similar to that of the first embodiment, likewise composed of a standing post 20, a shelf holder 30, and a shelf 40A, but different in that the shelf 40A further includes an opening 44 located between the two adjacent fastened portions 42 and the opening 44 is wider than outer diameter of the standing post 20.

[0024] In light of the structure of the second embodiment, while intending to install the shelf 40A onto the standing post 20, the user can align an upper part of the shelf holder 30 with the opening 44 and horizontally drive the stand bar 20 to move toward the opening 44 and to pass through the opening 44, such that the shelf 40A can directly reach where is close to the shelf holder 30. Accordingly, the user does not have to move the shelf 40A to pass through one of two ends of the standing post 20 for engaging the fastened portions 42 into the fastening portions 35 and 38 but directly move the shelf 40A toward where the fastening portions 35 and 38 are located to engage the fastened portions 42 into the fastening portions 35 and 38. In other words, the rack 12 of the second embodiment can be assembled within the smaller space. On the contrary, when the user intends to remove the shelf 40A from the standing post 20, the same effect can be done. Therefore, the rack 12 of the second embodiment not only attains the same effect but also further simplifies the installation of the rack 12.

[0025] In conclusion, the present invention includes the following advantages.

[0026] 1. The present invention can simplify the structure of the rack to enable easily processing the components at the first time without the second time, shorten the time that the components are made, and reduce the materials, thus decreasing the production cost.

[0027] 2. The present invention simplifies the installation and the quantity of the components to be easily assembled and conveniently dissembled.

[0028] Although the present invention has been described with respect to specific preferred embodiments thereof, it is no way limited to the details of the illustrated structures but changes and modifications may be made within the scope of the appended claims.

What is claimed is:

1. A sectional combination rack comprising:

a standing post having a plurality of axially spaced annular grooves each horizontally formed around outer circumference thereof;

a shelf holder having a plurality of mated halves combined together, each of said mated halves having a flange formed at an inner side thereof, said flanges being engaged into said annular grooves respectively, said mated halves axially extending along said standing post, each of said mated halves externally having at least one fastening portion axially extending along said standing post; and

a shelf mounted to said shelf holder and having a plurality of fastened portions capable of being engaged into said fastening grooves.

2. The rack as defined in claim 1, wherein said shelf holder comprises a first mated half and a second mated half, said first mated half having two lugs, said second mated half having two recesses for engaging said two lugs therein.

3. The rack as defined in claim 1, wherein each of said mated halves comprises at least one stop portion formed at a bottom end thereof and located at an end of said fastening portion for limiting movement of said fastened portions.

4. The rack as defined in claim 1, wherein each of said fastening portions is tapered to gradually shrink from top to bottom.

5. The rack as defined in claim 1, wherein said shelf is a basket.

6. The rack as defined in claim 1, wherein each of said fastened portions is a straight bar.

7. The rack as defined in claim 1, wherein said shelf further comprises an opening located between said two adjacent fastened portions, said opening being wider than outer diameter of said standing post.

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