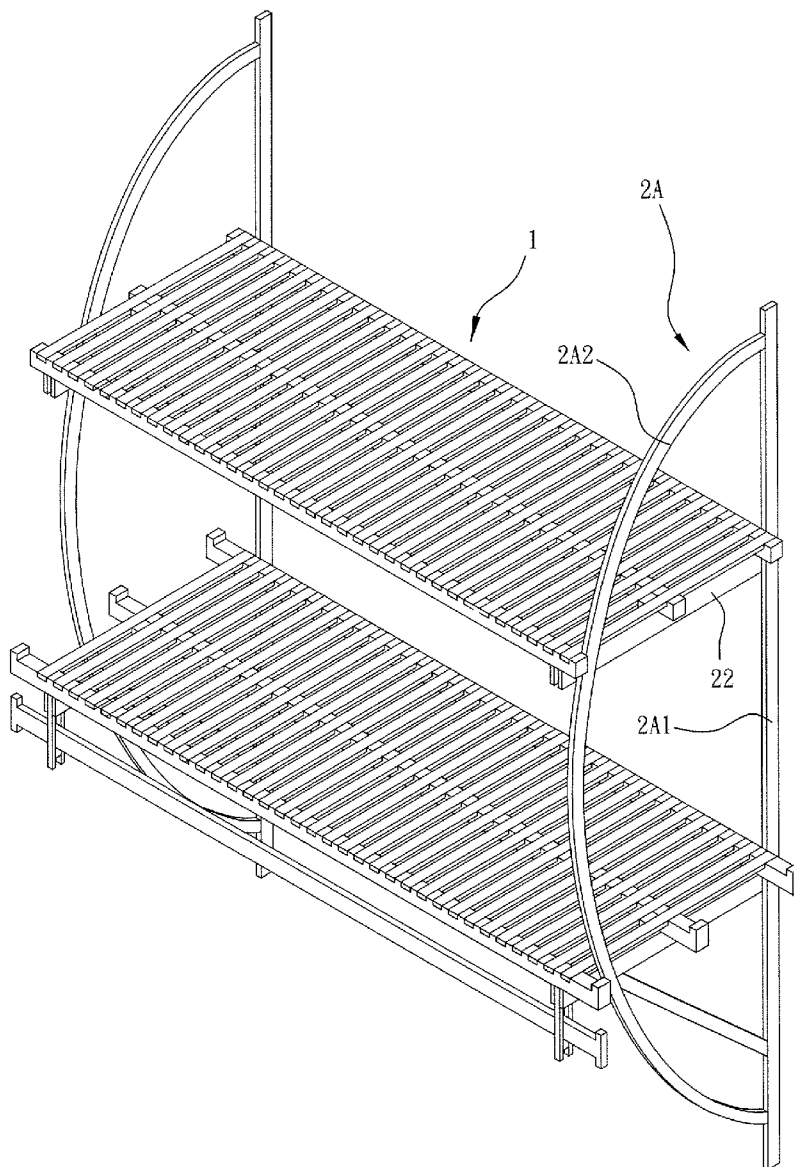




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(19) **United States**(12) **Patent Application Publication**
WANG(10) **Pub. No.: US 2014/0217046 A1**(43) **Pub. Date: Aug. 7, 2014**(54) **ASSEMBLABLE STORAGE RACK**(57) **ABSTRACT**(71) Applicant: **I-CHEN WANG**, Taipei City (TW)(72) Inventor: **I-CHEN WANG**, Taipei City (TW)(21) Appl. No.: **13/761,183**(22) Filed: **Feb. 7, 2013****Publication Classification**(51) **Int. Cl.**
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CPC **A47F 5/00** (2013.01)
USPC **211/134**

The assemblable storage rack comprises at least one shelf and multiple supporting brackets, wherein the supporting brackets can be fixed to a wall, and the shelf can be placed on top of the supporting brackets. Each supporting bracket is provided with a stopper on a horizontal bar assembly thereof and a step on a vertical bar thereof. The internal distance between the stopper and the vertical bar is greater than the external distance between the second beam and the third beam of the shelf. In use, the stoppers of the supporting brackets can be inserted into the corresponding gaps of the shelf to abut one side of the second beam that is far away from the third beam, whereas the third beam can be placed under the steps of the supporting brackets, so that the shelf can be prevented from detaching the supporting brackets.



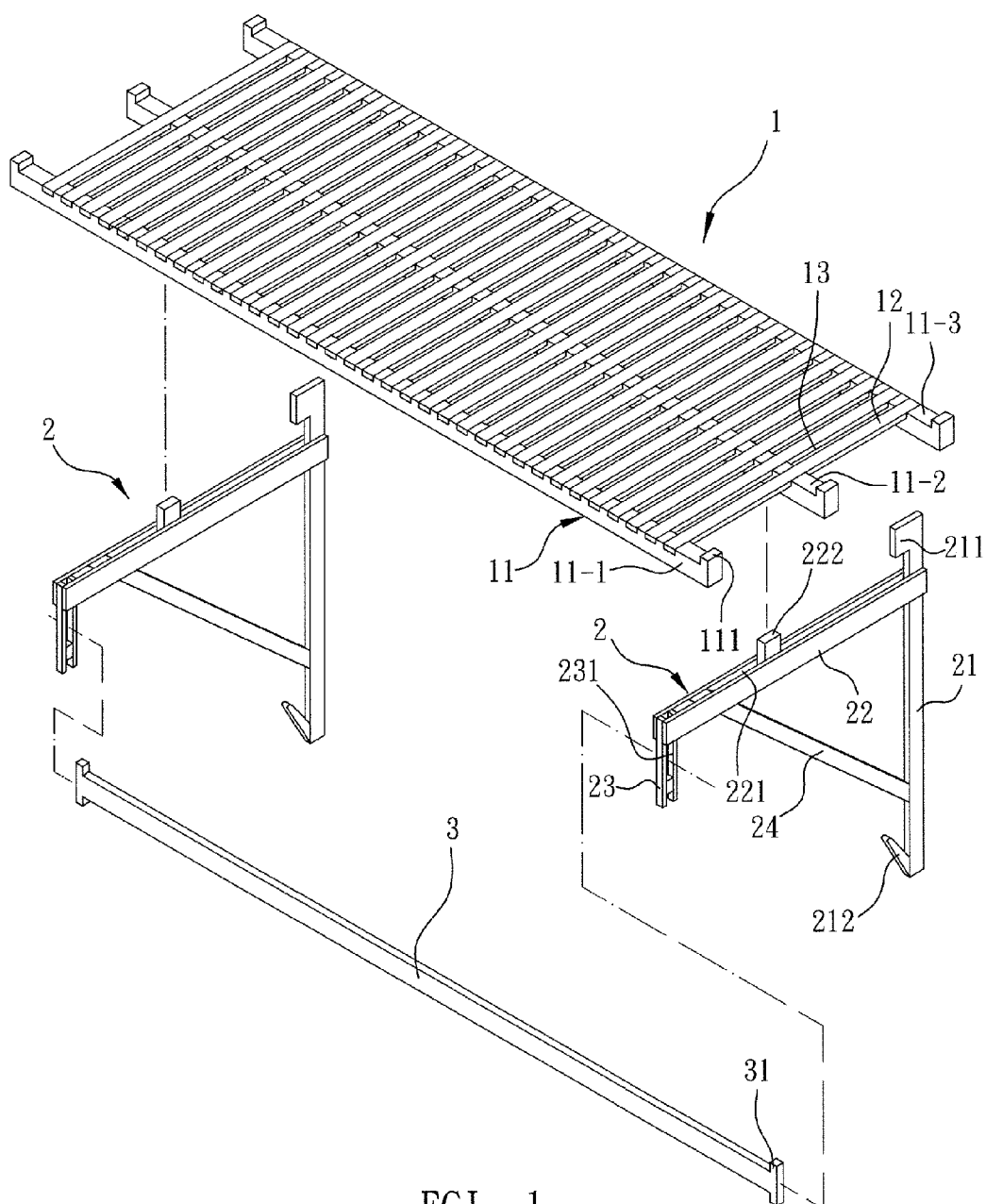


FIG. 1

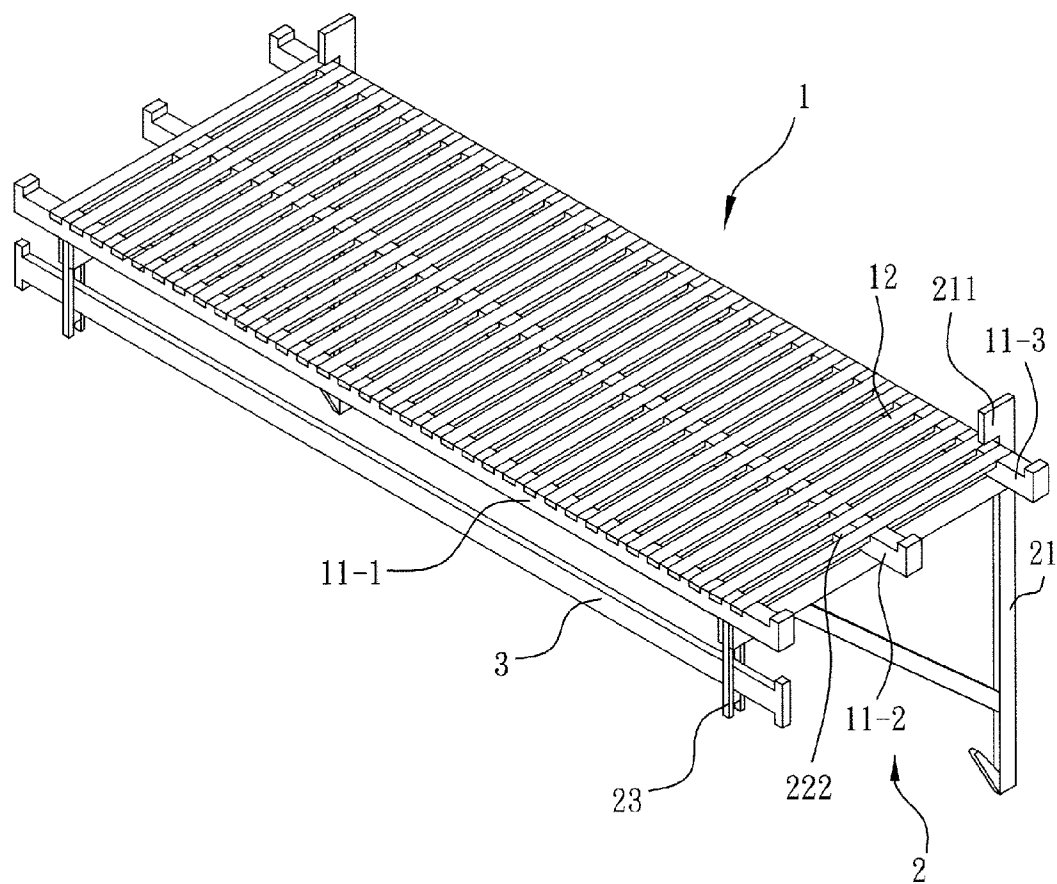
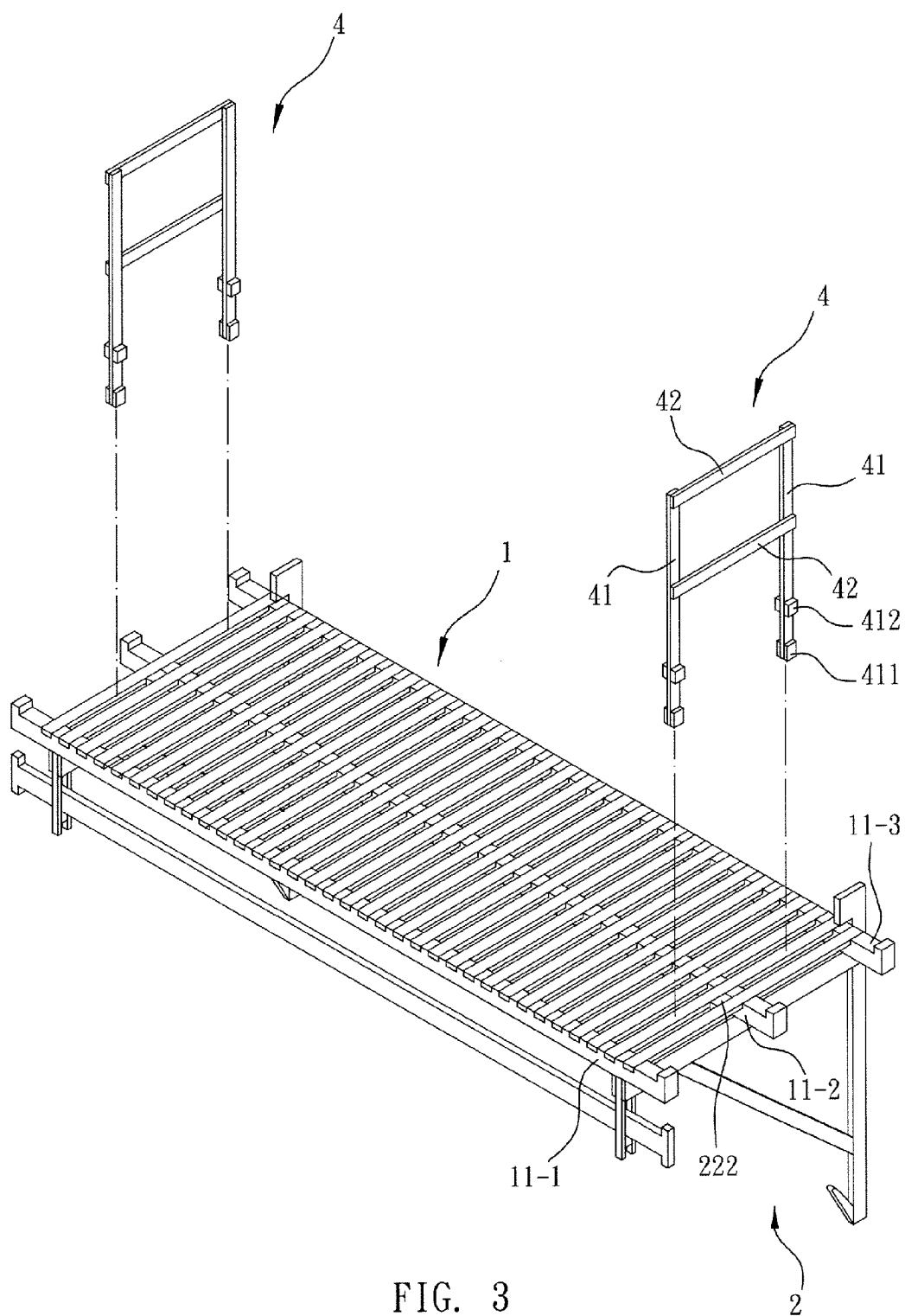


FIG. 2



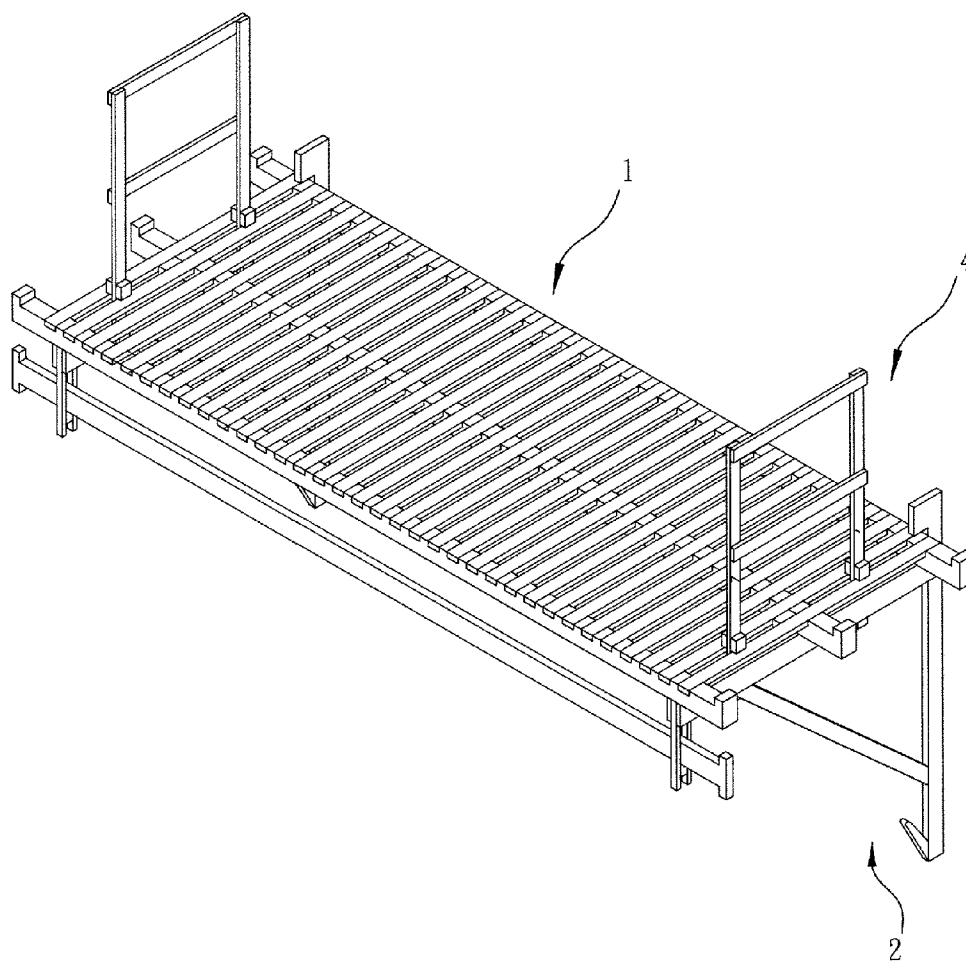


FIG. 4

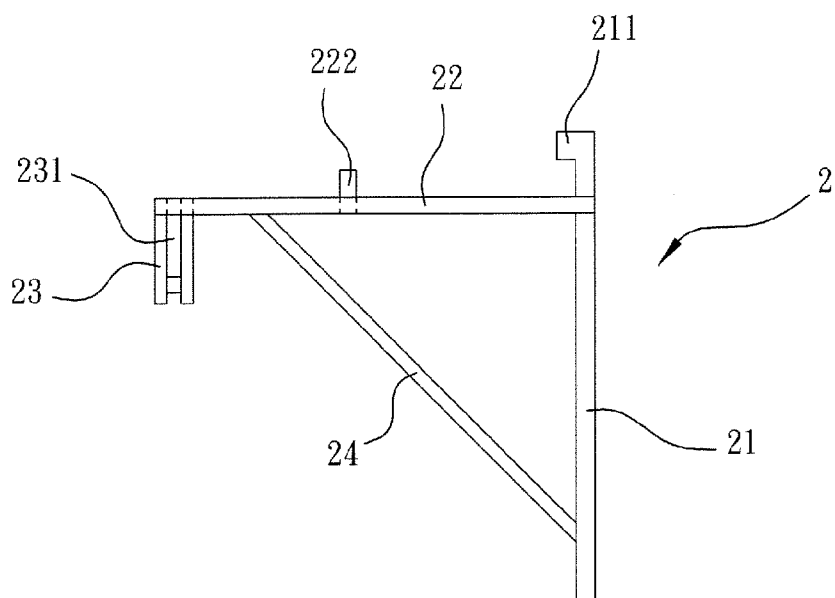


FIG. 5A

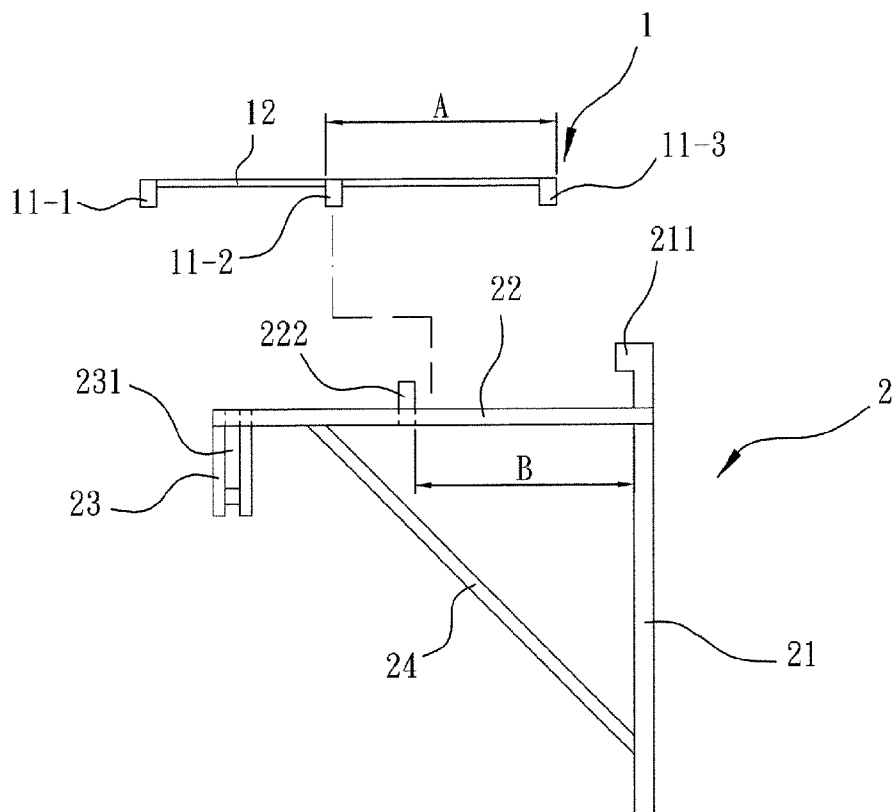


FIG. 5B

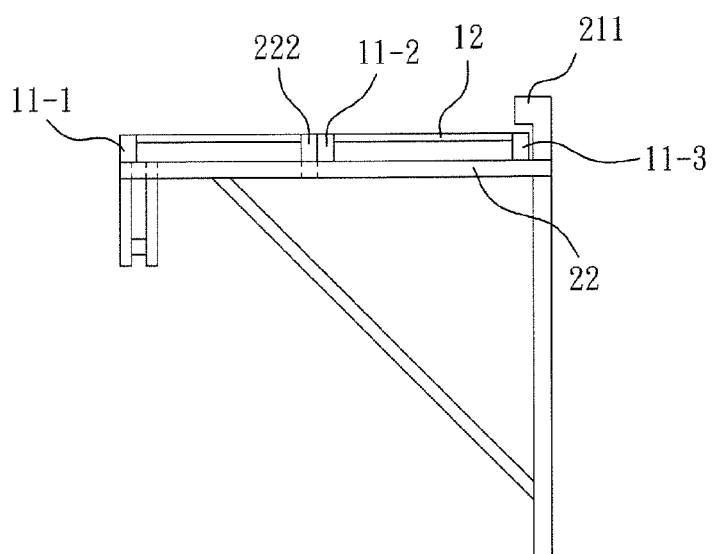


FIG. 5C

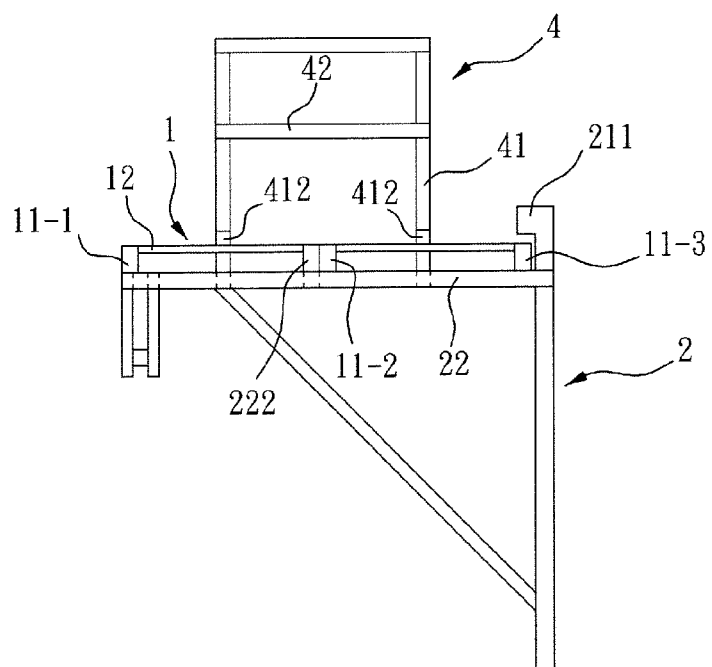


FIG. 5D

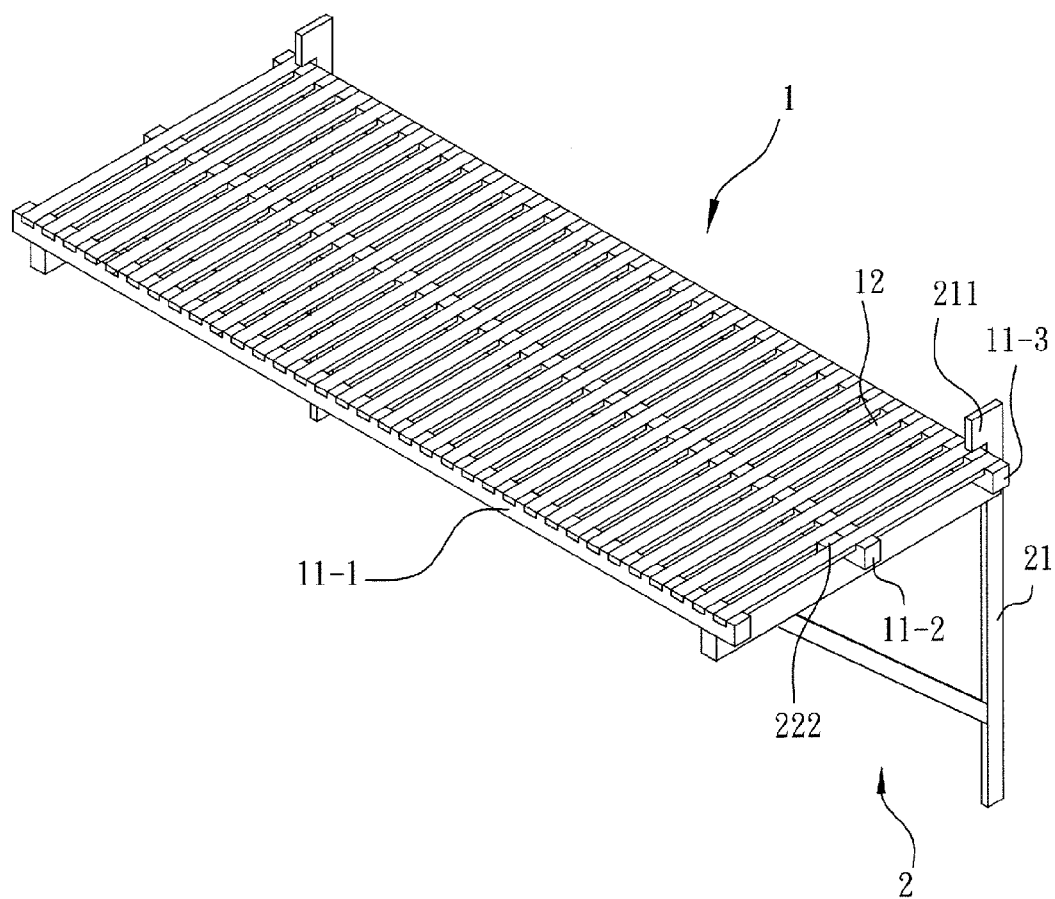


FIG. 6

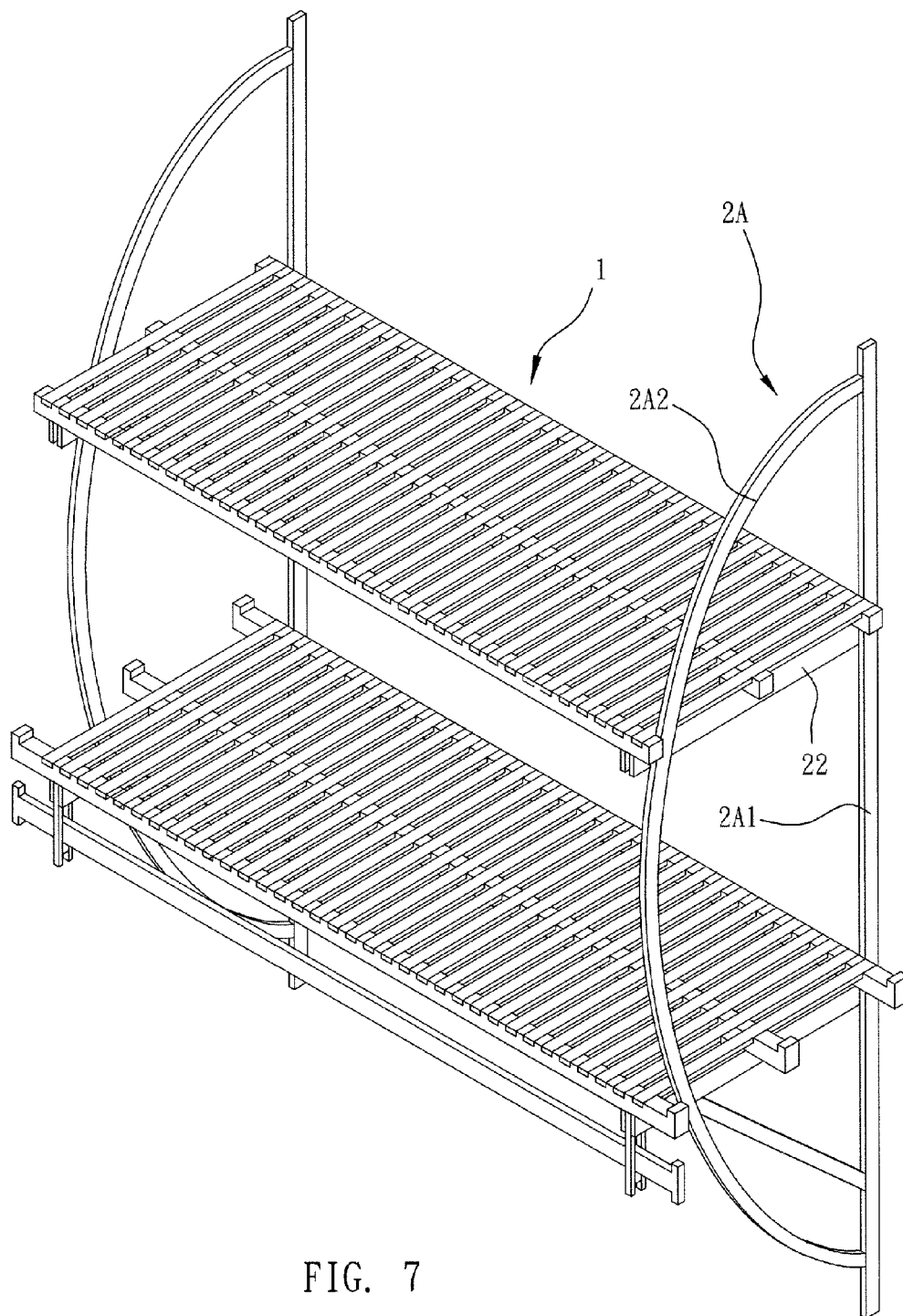


FIG. 7

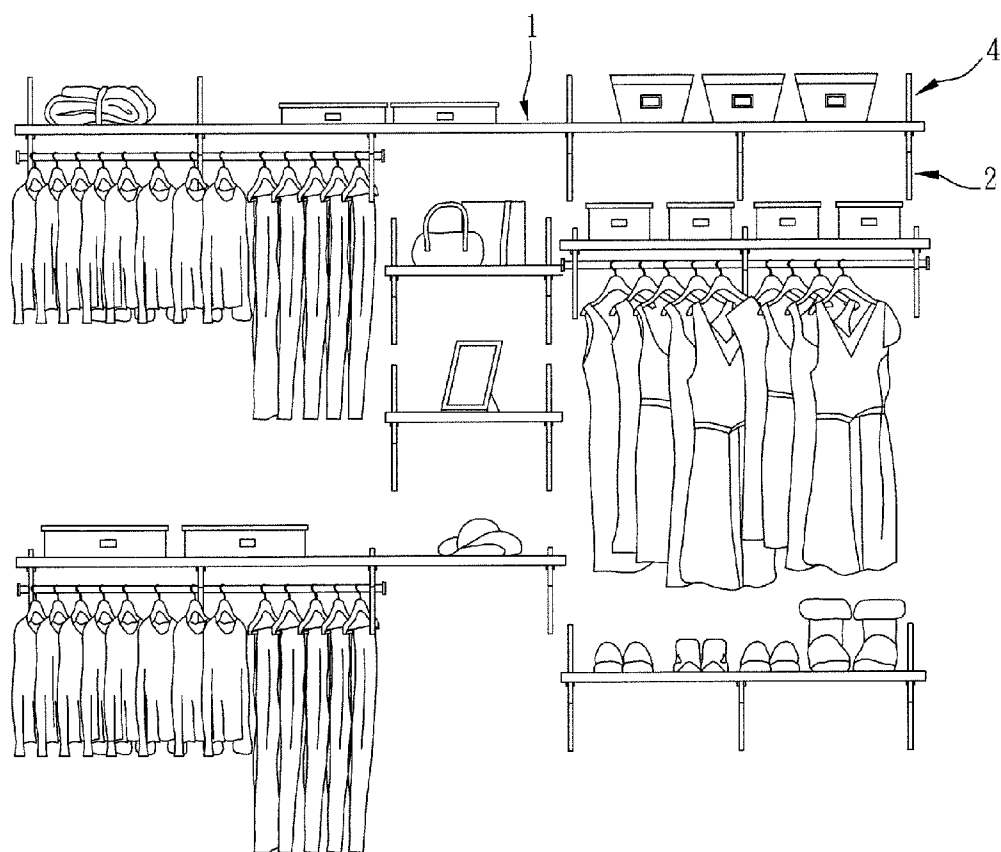


FIG. 8

ASSEMBLABLE STORAGE RACK

TECHNICAL FIELD OF THE INVENTION

[0001] The present invention relates to a storage rack of bamboo furniture and, more particularly, to an assemblable storage rack that can be assembled and mounted to a wall easily

DESCRIPTION OF THE PRIOR ART

[0002] Storage racks are commonly used for accommodating various articles, such as clothes, towels, blankets, books, and so on. There are various kinds of storage racks in the market. The existing metallic storage racks are constructed of metal poles which are connected by way of welding, bolts, or rivets. The existing bamboo storage racks are constructed by way of screws or nails. However, the appearance of those storage racks constructed by way of metal fasteners may not be satisfied for some persons having a high demand for their living rooms. Therefore, there is a need to develop a storage rack that can be assembled easily without metal fasteners.

SUMMARY OF THE INVENTION

[0003] The primary object of the present invention is to provide an assemblable storage rack that can be assembled easily and quickly, and can be expanded according to a practical requirement by adding the hanging bars or side frames to enhance its utility.

[0004] The primary feature of the present invention is that the assemblable storage rack is comprised of at least one shelf and multiple supporting brackets, wherein the supporting brackets can be fixed to a wall, and the shelf including a first beam, a second beam, and a third beam can be placed on top of the supporting brackets. In use, the stoppers provided in the supporting brackets can be inserted into the corresponding gaps of the shelf from a lower position to abut one side of the second beam that is far away from the third beam, whereas the third beam can be placed under the steps provided in the supporting brackets, so that the shelf can be confined by the stoppers and the steps of the supporting brackets, thereby preventing the shelf from detachment of the supporting brackets.

[0005] According to one aspect of the present invention, the assemblable storage rack comprises at least one shelf and multiple supporting brackets, wherein the shelf is constructed of multiple transverse slats fixed to multiple longitudinal beams including a first beam, a second beam, and a third beam. The second beam is located between the first beam and the third beam, wherein an external distance is defined between an outer side of the second beam and an outer side of the third beam. The transverse slats are parallel arranged on the longitudinal beams to define multiple gaps there between. Each supporting bracket includes a vertical bar and a horizontal bar assembly connected to the vertical bar at one end thereof. The vertical bar is formed with a step at its top end. The horizontal bar assembly defines a vertical through slot therein and is provided with a stopper extending upwardly from the vertical through slot, wherein an internal distance is defined between an inner side of the stopper and an inner side of the vertical bar. The internal distance between the stopper and the vertical bar is greater than the external distance between the second beam and the third beam of the shelf, so that the stoppers provided in the horizontal bar assemblies of the supporting brackets can be inserted into the correspond-

ing gaps of the shelf from a lower position to abut one side of the second beam that is far away from the third beam, whereas the third beam can be placed under the steps of the vertical bars of the supporting brackets, so that the shelf can be confined by the stoppers and the steps of the supporting brackets, thereby preventing the shelf from detachment of the supporting brackets.

[0006] According to another aspect of the present invention, each beam of the self is formed with two upwardly extending protrusions respectively at two ends thereof for hanging clothes.

[0007] According to a further aspect of the present invention, the horizontal bar assembly of each supporting bracket is provided with a seat at another end thereof, the seat extending downwardly and defining a slot therein; the assemblable storage rack may further comprise a hanging bar inserted through the slots of the seats provided at the supporting brackets for hanging clothes.

[0008] According to a still further aspect of the present invention, the hanging bar is formed with protrusions at its two ends to prevent it from detaching out of the slots of the seats.

[0009] According to a still further aspect of the present invention, the vertical bar of each supporting bracket is formed with a hook at its bottom end for hanging articles.

[0010] According to a still further aspect of the present invention, the assemblable storage rack may further comprise multiple side frames, each of which is constructed of multiple vertical bars and multiple horizontal bars fixed thereto. Each vertical bar of each side frame is provided with a first block at its bottom end and a second block at a position higher than the first block, wherein the first blocks each has a dimension approximately the same as the vertical through slots of the horizontal bar assemblies of the supporting brackets and less than the gaps between the slats of the shelf, whereas the second blocks each has a dimension greater than the gaps between the slats of the shelf, so that the first blocks can be inserted through the corresponding gaps of the shelf and engaged in the vertical through slots of the supporting brackets from an upper position, and the second blocks can be engaged with the corresponding slats of the shelf, thereby mounting the side frames to the shelf and the supporting brackets.

[0011] In conclusion, the assemblable storage rack of the present invention can be assembled easily and quickly and mounted to a wall, and can be expanded according to a practical requirement by adding the hanging bar or the side frame for accommodating various articles, such as clothes, towels, blankets, books, and so on.

[0012] Other objects, advantages, and novel features of the present invention will become more apparent from the following detailed description when taken in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] FIG. 1 shows an exploded view of an assemblable storage rack according to a first embodiment of the present invention.

[0014] FIG. 2 shows an assembled view of the first embodiment of the present invention.

[0015] FIG. 3 shows an exploded view of the first embodiment that further includes two side frames.

[0016] FIG. 4 shows an assembled view of the first embodiment that further includes two side frames.

[0017] FIG. 5A shows a side view of one supporting bracket of the present invention.

[0018] FIG. 5B shows a schematic side view of the present invention that illustrates the relationship between the shelf and the supporting brackets of the present invention.

[0019] FIG. 5C shows a side view of the present invention wherein the shelf and the supporting brackets are assembled.

[0020] FIG. 5D shows a side view of the present invention wherein the shelf, the supporting brackets, and the side frames are assembled.

[0021] FIG. 6 shows an assembled view of an assemblable storage rack according to a second embodiment of the present invention.

[0022] FIG. 7 shows an assembled view of an assemblable storage rack according to a third embodiment of the present invention.

[0023] FIG. 8 shows a working plan view of the present invention, wherein the storage rack can be expanded for accommodating or arranging more articles.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0024] Various embodiments of the present invention will be illustrated in the following paragraphs with reference to the accompanying drawings and the reference numerals, so that those skilled in the art can implement the present invention after reading the present specification.

[0025] FIGS. 1 and 2 show an assemblable storage rack according to a first embodiment of the present invention. As shown, the assemblable storage rack generally comprises a shelf (1), two supporting brackets (2), and a hanging bar (3). The shelf (1) is constructed of multiple transverse slats (12) fixed to multiple longitudinal beams (11) including a first beam (11-1), a second beam (11-2), and a third beam (11-3). The transverse slats (12) can be made of bamboo. Each beam of the shelf (1) is formed with two upwardly extending protrusions (111) respectively at two ends thereof for hanging clothes. The number of the longitudinal beams (11) can be increased, which is dependent on the size of shelf (1). The second beam (11-2) is located between the first beam (11-1) and the third beam (11-3). The transverse slats (12) are parallel and evenly arranged on the longitudinal beams (11) to define multiple gaps (13) therebetween. As shown in FIG. 5B, an external distance (A) is defined between an outer side of the second beam (11-2) and an outer side of the third beam (11-3).

[0026] Referring back to FIGS. 1 and 2, the supporting bracket (2), which can be made of bamboo, includes a vertical bar (21) and a horizontal bar assembly (22) connected to the vertical bar (21) at one end thereof. The vertical bar (21) is formed with a step (211) at its top end and a hook (212) at its bottom end. The hook (212) can be used for hanging articles. The horizontal bar assembly (22) defines a vertical through slot (221) therein and is provided with a stopper (222) extending upwardly from the vertical through slot (221). The horizontal bar assembly (22) may be constructed of two parallel bars respectively connected to two opposing sides of the vertical bar (21), so that a space or slot is defined between the two bars. A reinforcement bar (24) can be connected between the vertical bar (21) and the horizontal bar assembly (22) to ensure the supporting brackets (2) to have an adequate strength. As shown in FIG. 5B, an internal distance (B) is defined between an inner side of the stopper (222) and an inner side of the vertical bar (21). The internal distance (B)

between the stopper (222) and the vertical bar (21) is greater than the external distance (A) between the second beam (11-2) and the third beam (11-3) of the shelf (1). Referring back to FIGS. 1 and 2, the horizontal bar assembly (22) of each supporting bracket (2) is provided with a seat (23) at another end thereof, wherein the seat (23) extends downwardly and defines a slot (231) therein. The hanging bar (3) can be inserted through the slots (231) of the seats (23) provided at the supporting brackets (2). Furthermore, the hanging bar (3) can be formed with protrusions (31) at its two ends to prevent it from detaching out of the slots (231).

[0027] In use, the two supporting brackets (2) can be fixed to a wall, as shown in FIG. 5A. Thereafter, the shelf (1) can be placed on top of the two supporting brackets (2), as shown in FIG. 5B. Since the distance (A) defined on the shelf (1) is greater than the distance (B) defined on the supporting brackets (2), the second beam (11-2) and the third beam (11-3) can be located between the stoppers (222) and the steps (211) of the supporting brackets (2). Furthermore, the stoppers (222) provided at the horizontal bar assemblies (22) of the supporting brackets (2) can be inserted into the corresponding gaps (13) of the shelf (1) from a lower position to abut one side of the second beam (11-2) that is far away from the third beam (11-3), whereas the third beam (11-3) can be placed under the steps (211) of the vertical bars (21) of the supporting brackets (2), so that the shelf (1) can be confined by the stoppers (222) and the steps (211) of the supporting brackets (2), thereby preventing the shelf (1) from detachment of the supporting brackets (2), as shown in FIG. 5C. The hanging bar (3) can be inserted through the slots (231) of the seats (23) provided at the supporting brackets (2) for hanging articles. FIG. 2 shows an assembled view of the first embodiment of the present invention.

[0028] As shown in FIG. 3, the first embodiment may further comprise multiple side frames (4), which can be made of bamboo, for accommodating large articles more appropriately. Each side frame (4) is constructed of two or more vertical bars (41) and two or more horizontal bars (42) fixed to the vertical bars (41). Each vertical bar (41) of each side frame (4) is provided with a first block (411) at its bottom end and a second block (412) at a position higher than the first block (411), wherein the first blocks (411) each has a dimension approximately the same as the vertical through slots (221) of the horizontal bar assemblies (22) of the supporting brackets (2) and less than the gaps (13) between the slats (12) of the shelf (1), whereas the second blocks (412) each has a dimension greater than the gaps (13) between the slats (12) of the shelf (1), so that the first blocks (411) can be inserted through the corresponding gaps (13) of the shelf (1) and engaged in the vertical through slots (221) of the supporting brackets (2) from an upper position, and the second blocks (412) can be engaged with the corresponding slats (12) of the shelf (1), thereby mounting the side frames (4) to the shelf (1) and the supporting brackets (2), as shown in FIGS. 4 and 5D.

[0029] FIG. 6 shows a second embodiment of the present invention, which has the same structure as the first embodiment except that the second embodiment does not include the seats (23), the hooks (212) and the hanging bar (3) mentioned above.

[0030] FIG. 7 shows a third embodiment of the present invention, which includes two shelves (1) mounted on two supporting brackets (2A). The shelves (1) are the same as those employed in the previous embodiments. Each supporting bracket (2A) includes a vertical bar (2A1), a curved bar

(2A2) fixed to two ends of the vertical bar (2A1), and two horizontal bar assemblies (22), which are located at different heights, respectively connected between the vertical bar (2A1) and the curved bar (2A2). With these features, two or more tiers of storage rack can be obtained easily, and thus more articles can be accommodated on the rack.

[0031] In conclusion, the storage rack of the present invention can be assembled easily and quickly and mounted to a wall, and can be expanded according to a practical requirement by adding the hanging bar or the side frame for accommodating various articles, such as clothes, towels, blankets, books, and so on, as shown in FIG. 8. Accordingly, it is advantageous over the prior art.

[0032] Although the present invention has been described with a certain degree of particularity, it is understood that the present disclosure is made by way of example only and the combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention hereinafter claimed.

I claim:

1. An assemblable storage rack, comprising at least one shelf and multiple supporting brackets, wherein the shelf is constructed of multiple transverse slats fixed to multiple longitudinal beams including a first beam, a second beam, and a third beam, the second beam being located between the first beam and the third beam, wherein an external distance is defined between an outer side of the second beam and an outer side of the third beam, the transverse slats being parallel arranged on the longitudinal beams to define multiple gaps there between, each supporting bracket including a vertical bar and a horizontal bar assembly connected to the vertical bar at one end thereof, the vertical bar being formed with a step at its top end, the horizontal bar assembly defining a vertical through slot therein and being provided with a stopper extending upwardly from the vertical through slot, wherein an internal distance is defined between an inner side of the stopper and an inner side of the vertical bar, the internal distance between the stopper and the vertical bar is greater than the external distance between the second beam and the third beam of the shelf, so that the stoppers provided in the horizontal bar assemblies of the supporting brackets can be

inserted into the corresponding gaps of the shelf from a lower position to abut one side of the second beam that is far away from the third beam, whereas the third beam can be placed under the steps of the vertical bars of the supporting brackets, so that the shelf can be confined by the stoppers and the steps of the supporting brackets, thereby preventing the shelf from detachment of the supporting brackets.

2. The assemblable storage rack of claim 1, wherein each beam of the self is formed with two upwardly extending protrusions respectively at two ends thereof.

3. The assemblable storage rack of claim 1, wherein the horizontal bar assembly of each supporting bracket is provided with a seat at another end thereof, the seat extending downwardly and defining a slot therein.

4. The assemblable storage rack of claim 3, further comprising a hanging bar capable of being inserted through the slots of the seats provided at the supporting brackets.

5. The assemblable storage rack of claim 4, wherein the hanging bar is formed with protrusions at its two ends.

6. The assemblable storage rack of claim 1, wherein the vertical bar of each supporting bracket is formed with a hook at its bottom end.

7. The assemblable storage rack of claim 1, further comprising multiple side frames, each of which is constructed of multiple vertical bars and multiple horizontal bars fixed thereto, each vertical bar of each side frame is provided with a first block at its bottom end and a second block at a position higher than the first block, wherein the first blocks each has a dimension approximately the same as the vertical through slots of the horizontal bar assemblies of the supporting brackets and less than the gaps between the slats of the shelf, whereas the second blocks each has a dimension greater than the gaps between the slats of the shelf, so that the first blocks can be inserted through the corresponding gaps of the shelf and engaged in the vertical through slots of the supporting brackets from an upper position, and the second blocks can be engaged with the corresponding slats of the shelf, thereby mounting the side frames to the shelf and the supporting brackets.

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