# United States Patent

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[54] **TURNTABLE TYPE DISPLAY RACK ASSEMBLY**


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[52] **U.S. Cl.**.....**211/133**

[51] **Int. Cl.**.....**A47f 5/00**

[58] **Field of Search**.....211/133, 176, 177, 148, 106, 211/163



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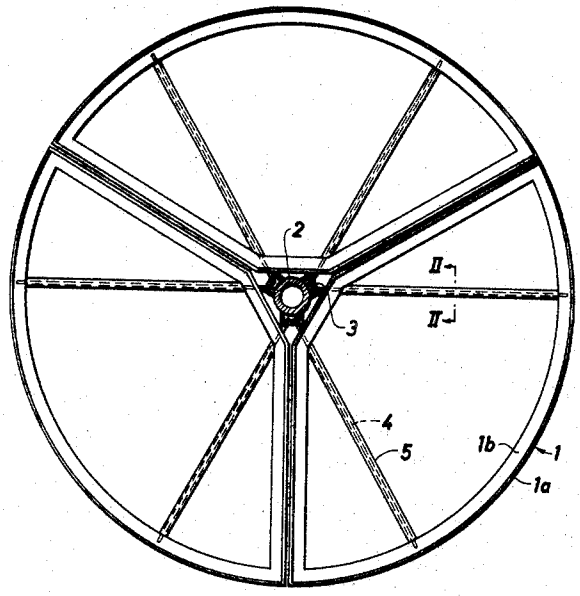
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[57] **ABSTRACT**

A display rack assembly has a turnable central column with rails thereon which have slits into which ends of lateral brackets are detachably inserted at any desired height of the rails, sectional racks are positioned on said brackets and guiding means are located on the undersides of the racks and each rest on the upper edges of one of said brackets for the purpose of supporting a display tray, rack, basket or the like on each rack.


**4 Claims, 11 Drawing Figures**



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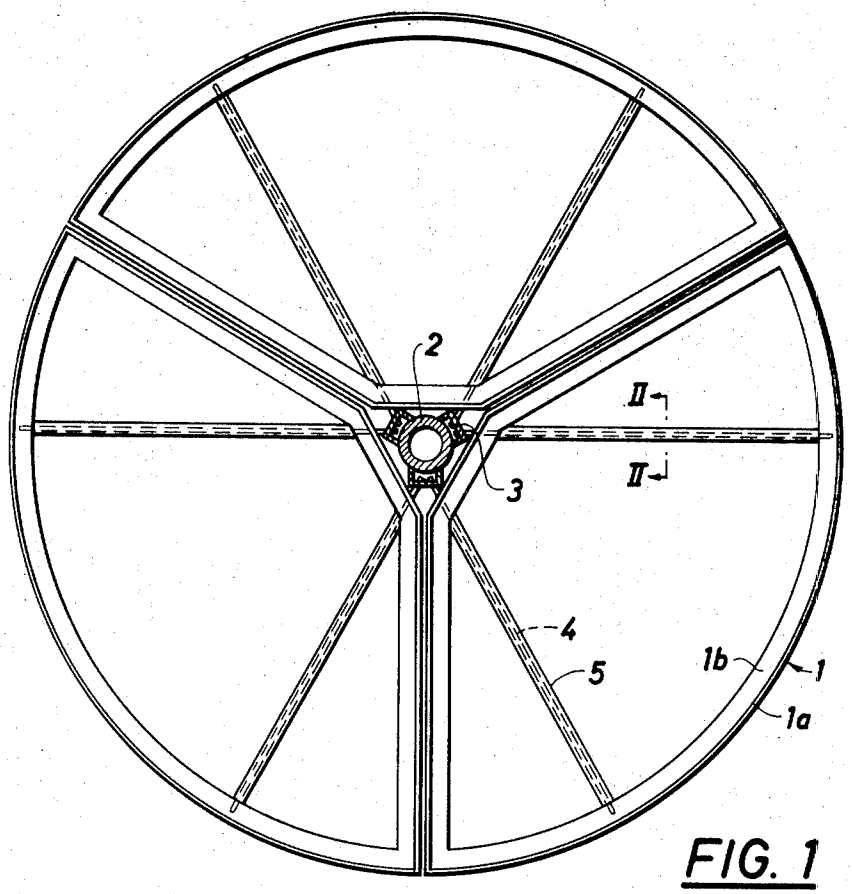



FIG. 1

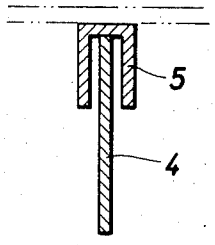



FIG. 2

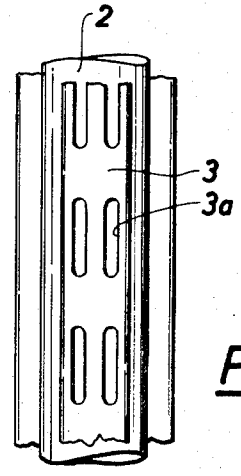



FIG. 3

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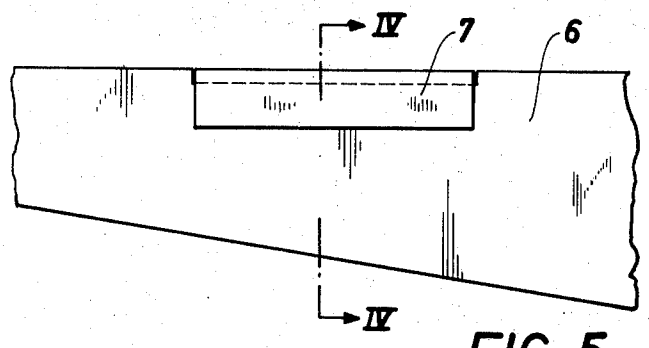



FIG. 5

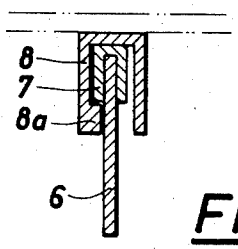



FIG. 4

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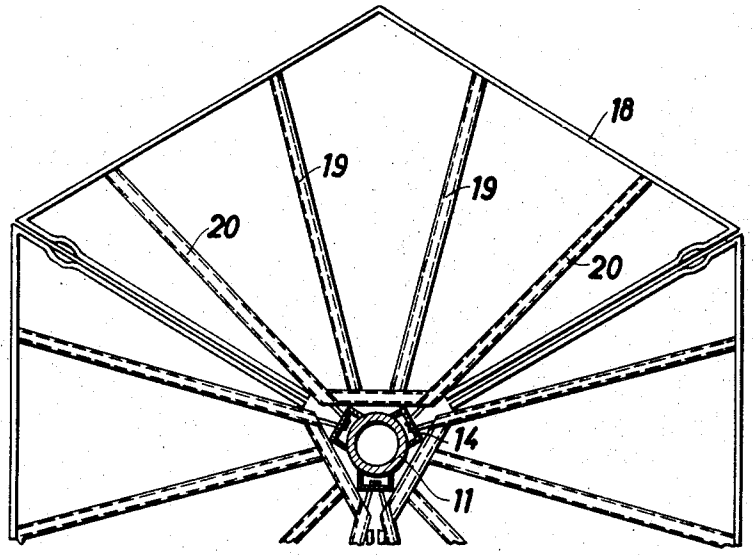



FIG. 6

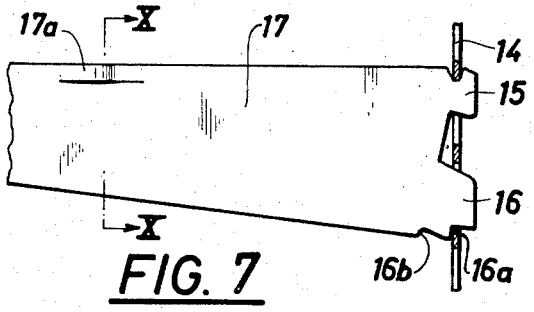



FIG. 7

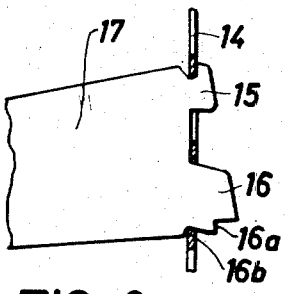



FIG. 8

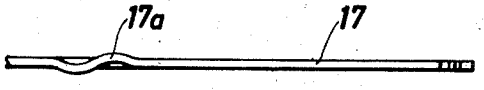



FIG. 9

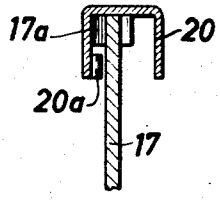



FIG. 10

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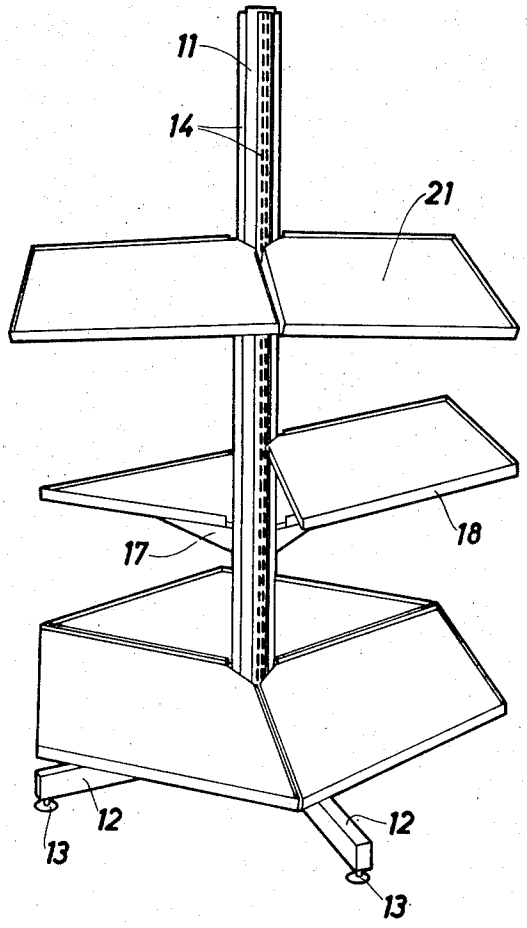



FIG. 11

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# TURNTABLE TYPE DISPLAY RACK ASSEMBLY

The present invention relates to a turntable type display rack assembly.

The main object of the invention is to provide turntable type display racks on which it is possible to adjust the height position of the racks in a simple manner and without having to resort to any tools. Said purpose has been achieved by the present invention, which is characterized by the racks being supported by brackets diverging in directions away from a central column to which they are detachably mounted.

Further objects and description of the invention will now be described more in detail with reference to the accompanying drawings, in which:

FIG. 1 is a top view of a display rack according to the present invention,

FIG. 2 is an enlarged cross-sectional view of a portion of the rack taken along line II—II of Fig. 1,

FIG. 3 is an enlarged side elevational view of a portion of the central column,

FIG. 4 is a cross-sectional view corresponding to FIG. 2 of a bracket forming part of the assembly and of a rail of a modified design arranged at the underside of said racks and cooperating with said bracket and taken at line IV—IV of Figure 5, but including a guide,

FIG. 5 is a side elevational view of a portion of the bracket illustrated in FIG. 4, but omitting the guide,

FIG. 6 is a top view corresponding to FIG. 1 of a portion of a rack plane, with said racks being a modification of the embodiment illustrated in FIG. 1,

FIG. 7 is an enlarged side elevational view of a bracket with its mounting means forming part of the assembly according to FIG. 6,

FIG. 8 is a side elevational view corresponding to FIG. 7 of the same bracket in another one of its mounting positions,

FIG. 9 is top view of the bracket illustrated in FIG. 7,

FIG. 10 is a cross-sectional view taken on line X—X of FIG. 7 and including a rail supported by said bracket arranged at the underside of a rack not shown, and

FIG. 11 is a side elevational view of a rack assembly according to FIGS. 6–10.

In the embodiment illustrated in FIGS. 1–3 the racks 1 are shaped as sectors of a circle and each has a frame of L-shaped metal sections 1*a* – 1*b* with one flange 1*a* forming the outward oriented edges of each rack and the flange 1*b* serving the purpose of supporting a display tray, for example, made of wood or glass, or a wire net rack, basket or the like. A central column is indicated at 2 on which are fastened bracket rails 3 having slits 3*a* arranged in double rows serving the purpose of receiving hook-shaped end portions of the brackets 4 to support the racks. U-shaped guiding means 5 are located on the undersides of and are fastened to the racks 1 in the mounted condition of the rack assembly and rest upon the upper edges of the brackets 4. As is evident from FIG. 1 the racks are each supported by a pair of brackets 4 with the brackets entering into the rail slits 3*a* and with each pair of brackets diverging in a direction away from the central column 2. By this arrangement the racks are prevented from being displaced along the brackets in a direction away from the column 2, as the guiding means 5 tend to retain the brackets in unchanged angular positions when the rack is subjected to a force operating in a direction away from the column 2. In the embodiment illustrated in



FIGS. 1–3 the two brackets providing the same bracket pair are detachably connected to each one of two adjacent bracket rails 3.

Raising or lowering of a rack is performed by each rack 1 being lifted from its brackets 4, whereafter said brackets are unhooked from the respective bracket rails 3 and hooked on at the desired height level, whereafter the rack again is placed upon said brackets. It is not necessary to arrange the racks in such a way that they constitute complete planes, but it is also possible to arrange the individual racks at different levels in between them. By the arrangement having the brackets in each bracket pair fastened to different bracket rails and because of the angle between the brackets, their rack is prevented from being displaced sidewise. In order to lessen the risk of the rack tipping over when loaded, the guiding means 5 are arranged at a certain distance inside of the radial edges of the rack.

In FIGS. 4 and 5 a modified embodiment is illustrated according to which one of the brackets 6 at its upper edge is shaped with one or several thicker portions 7, which by way of example may be made of bent sheet material. However, it is to be understood that this thicker portion also may be designed in a different manner, for example comprising two sheet metal pieces or the like being fastened to the laterals of the bracket 6. As is evident from FIG. 4, according to this embodiment, one flange of the rail 8 at its lower part is provided with a thicker edge portion 8*a* on the side facing inwards. The rails 8 illustrated in the FIGS. 4 and 5 are each connected to the frame of their rack 1 in such a way that lowering its position to a position in which the rails 8 embrace the upper edge portions of the brackets 6, this taking place by two brackets 6 of the ones supporting the rack against the bias of the resilient material of said two brackets by pressing with their outer ends in direction towards each other, whereafter the edge portions 8*a* of the rails are hooked on the brackets 6 by gripping the thick portions 7 of the said brackets. The opening width of the rails 8 right in front of the thick portions 7 are given a dimension slightly exceeding the width of said thicker portions. The edge portions 8*a* of the rails 8 are located at those sides of the rails, towards which the brackets 6 tend to swing due to their spring action. As a result the rack is prevented from being lifted off the brackets 6 without their later again being brought together against the spring action. By this arrangement the rack in an efficient manner is prevented from tilting over for example when one of its corner portions located outside the brackets is subjected to a heavy load.

It is not necessary that the brackets in each bracket pair are arranged in such a way that they must be pressed in a direction towards each other before their insertion into the bracket rails 8, it being possible to imagine also the opposite direction of the spring force, whereby the thick portions 8*a* of each one of the rails 8 shall be located at the opposite side of the bracket 6. The thick portions 8*a* and 7 of course also can be designed in a number of different ways without parting from the idea of the invention.

In the FIGS. 6–11 a central column is indicated at 11, which as is evident from the FIG. 11 is rotatably supported by a number of supporting legs 12 resting on the floor by means of feet 13. On the vertical column 11

there is a number of vertical rails **14** of U-shaped cross-section, preferably three of them, fastened at their edges corresponding the free leg ends of the U to column **11**. The rails **14** in their portion facing away from the column have double rows of slits **14***a* in which the brackets **17** can have one of their end portions inserted. In the FIG. **7**, **8** and **9** the portion of each bracket located next to a rail **14** is illustrated in an especially suitable embodiment. The bracket illustrated has in its inner end portion for one part an upper hook-shaped web **15**, and for another part a lower web **16**, which are each introduceable in one of the two slits located one above the other in the bracket rail **14**. The lower web **16** has two shoulders **16***a* and **16***b*. The webs **15** and **16** are given such dimensions and can be adjusted as to their position in such a manner that when mounting on the rail **14** the bracket inner end is with the upper web **15** in a raised position by lifting the outer end portion of the bracket, whereafter after a downward pivoting movement can bring either the shoulder **16***a* or the shoulder **16***b* to bear against the bracket rail **14**, whereupon the bracket occupies the position illustrated in FIG. **7**, when the shoulder **16***a* is against the rail or in the final position illustrated in FIG. **8**, when the shoulder **16***b* bears against the rail. Each one of the racks supported by the brackets **17** has a frame **18**, which substantially has the form of a rhomb. In the especially suitable embodiment of the racks illustrated in the FIG. **6–11** the acute angle of the romb is substantially 60° and its obtuse angle consequently 120°. As is evident from the FIG. **6** a number of stay rails **19** and **20** extend in a fan-shaped manner from and are fastened to the inside corner of the rack frame **18** and form the plane of the rack. The stays **19** and **20** are preferably made with rails of a U-shaped section with their opening side facing downwards as is evident from the FIG. **10**. Said rails **20** cooperate with the brackets **17** to support the racks. When the racks have the embodiment illustrated in FIG. **6** each whole rack plane obtains the shape of an equilateral hexagon as most clearly is evident from the FIG. **6**. The chamfering of the innermost corners of the rack as can be understood serves the purpose of providing space for the column **1** and bracket rails **14**. In the embodiment illustrated each rack is supported by two brackets, which at their innermost end are each suspended in one of the two bracket rails **14** located adjacent one another. The angle between the stay rails **20** can be suitably adjusted in such a way that when suspending the rack on the brackets these must be brought in a direction towards or away from each other against the bias of the spring force of the bracket material, to permit the rails **20** to be brought down over the brackets to the position illustrated in FIG. **10**. In order to prevent the rack from unintentionally being lifted off the brackets, the latter at their upper edge portions are provided with thicker portions **17***a* and the stay rails **20** at one of their lower edge portions are provided with thicker portions **20***a*, whereby the thick portions exhibit such a height that they can grip around each other in such a manner as is shown in FIG. **10**. The thick portions **17***a* and **20***a* can suitably be made as a preferably arched deformation of the edge portion of the brackets and the stay rails respectively. In the embodiment of the racks illustrated in the FIG. **6–11** the mounting of, for example, a rim of stiff material by way of example glass, among other things, because of the straight edges is made possible. In FIG. **11** the edges located at the front side of the display assembly of the racks entering into the part of the assembly at the upper height plane are supported on brackets, of which the ones located farthest away from each other are fixed in the position illustrated in FIG. **7**, and the ones located nearest to each other are fixed in the inclined position illustrated in FIG. **8**. As seen from the front it therefore appears as if both the rack edges located nearest to each other are almost horizontal, which can be of advantage when two adjacent racks are intended to form a common surface on which, for example, goods for the display can be placed.

I claim:

**1**. A turntable type display rack assembly comprising a plurality of racks, a central column, a plurality of brackets detachably connected to and diverging away from said column, supports for said racks, pairs of said brackets supporting each one of said racks and guiding means provided on each of said racks resting on a pair of said brackets whereby each rack in their diverging direction is retained comparatively unchanged in case the rack is subjected to a force in a direction away from said central column in order to present said rack from being displaced out of its position by action of said force.

**2**. A turntable type display rack assembly as claimed in claim **1** wherein said guiding means consists of rails each having a U-section and fastened to the underside of one of said racks and said rails, in the mounted condition of their rack, rest on said brackets with the open side of the rails facing down.

**3**. A turnable type display rack assembly as claimed in claim **1** wherein each said rack has the form of a sector of a circle and said guiding means consists of rails each having a U-section and fastened to the underside of one of said racks and resting on said brackets with the rail open side facing down, and said guiding rails are located at a distance inside the radial edges of said racks.

**4**. A turntable type display rack assembly as claimed in claim **1** including fastening means arranged on said racks consisting of rails each of an inverted U-shaped cross-section, the lateral flanges of said rails having thick portions, with the upper edge portions of said brackets having thick portions each being engaged by one of said rail thick portions in a hooklike manner.

* * * * *