United States Patent

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[72] Inventor **Anthony Stanley Miller, Jr.**
Happy Acres, R.D. 2, Atsion-Medford Road, Vincentown, N.J. 08088

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[54] **CLOTHING RACK**
12 Claims, 9 Drawing Figs.

[52] **U.S. Cl.** **211/107,** 182/187
[51] **Int. Cl.** **A47f 5/08**
[50] **Field of Search** 211/107, 112, 110, 111; 248/221; 182/187, 191, 221

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Primary Examiner—Nile C. Byers, Jr.
Attorney—Caesar, Rivise, Bernstein & Cohen

ABSTRACT: A clothing rack adapted to be mounted on a supporting column in a clothing store. The rack comprises a continuous loop that surrounds the column, and a plurality of bars which connect the loop to the column. Each of the bars includes a mounting plate which abuts the column and an adjustment mechanism for increasing the effective length of the bar, whereby the bar is tightly held between the loop and the mounting plate, thus forcing the mounting plate against the column. This force will in turn maintain the horizontal and vertical orientation of the loop relative to the column.

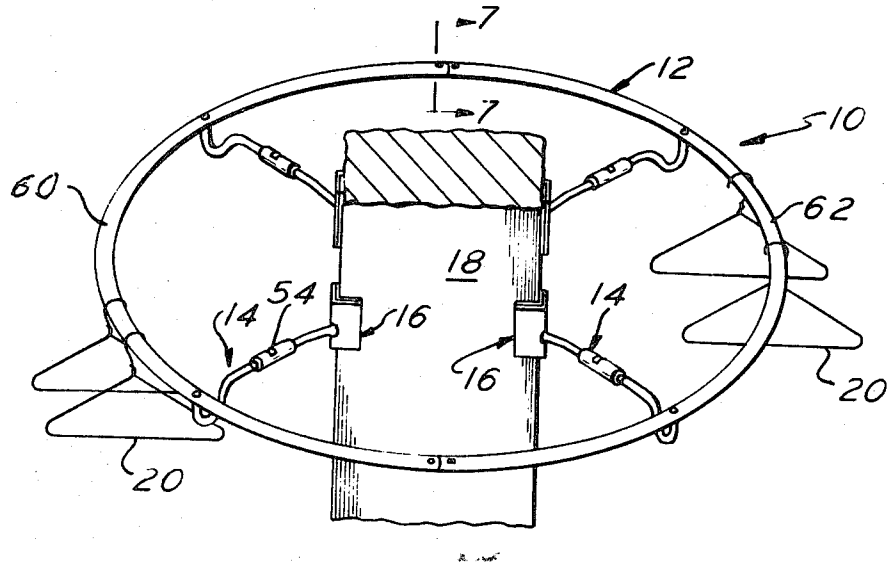


FIG. 1

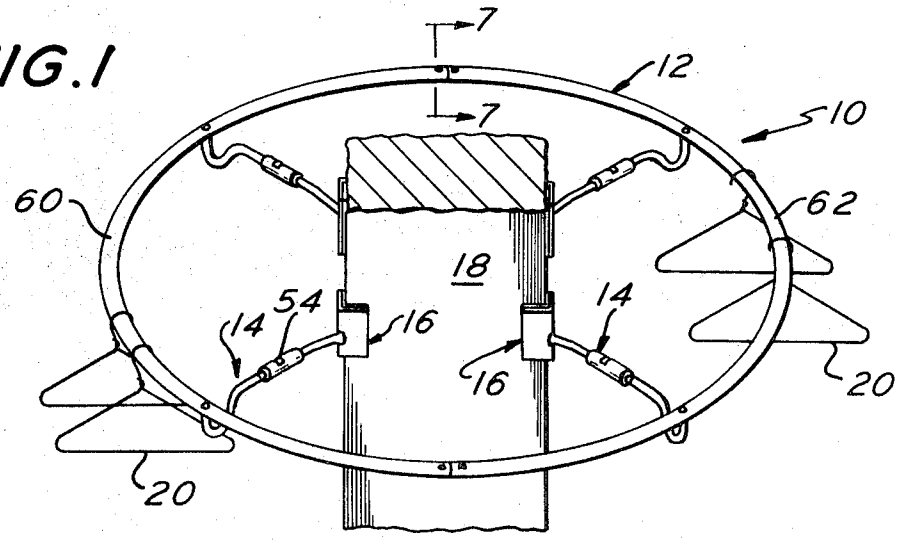


FIG. 2

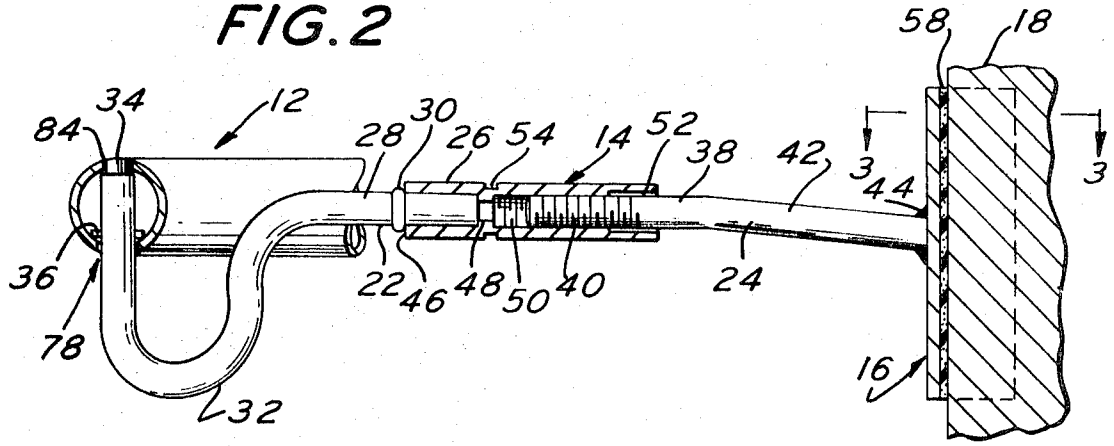
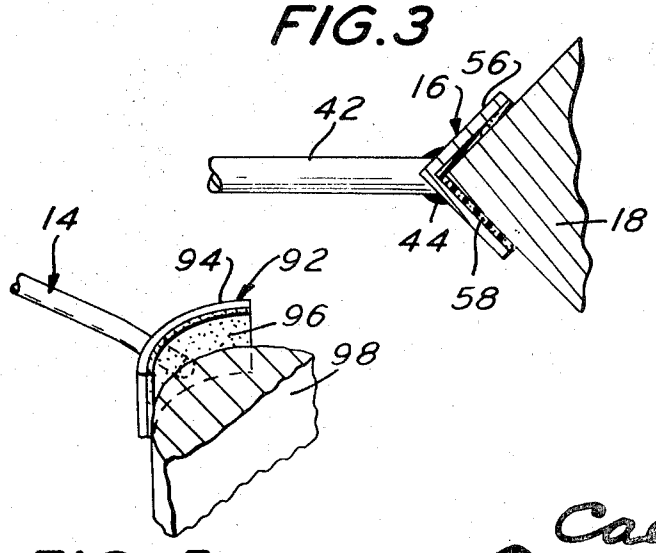


FIG. 3



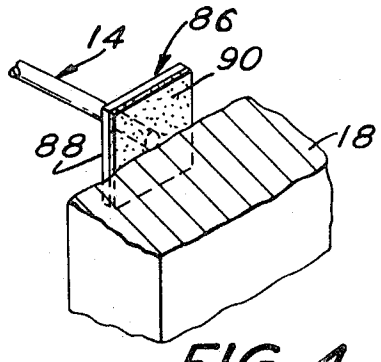


FIG. 4

FIG. 5

INVENTOR
ANTHONY S. MILLER
BY
Caesar, Rivise, Bernstein & Cohen
ATTORNEYS.

FIG. 6

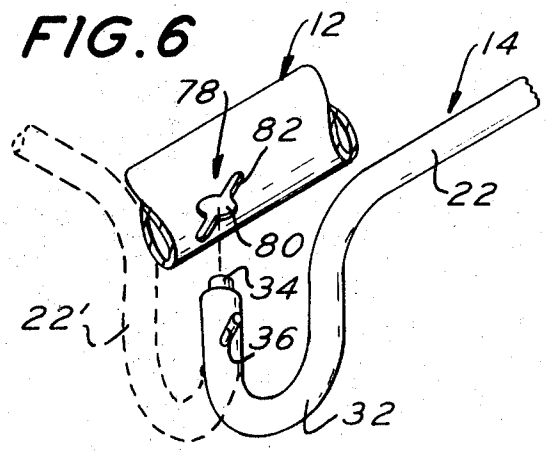


FIG. 7

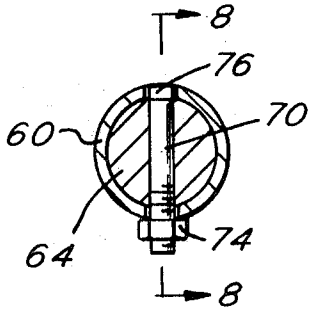


FIG. 8

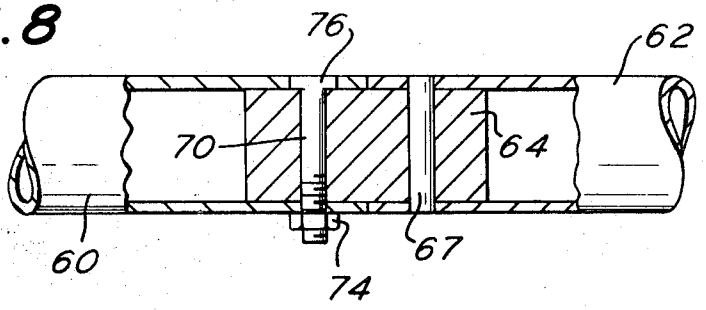
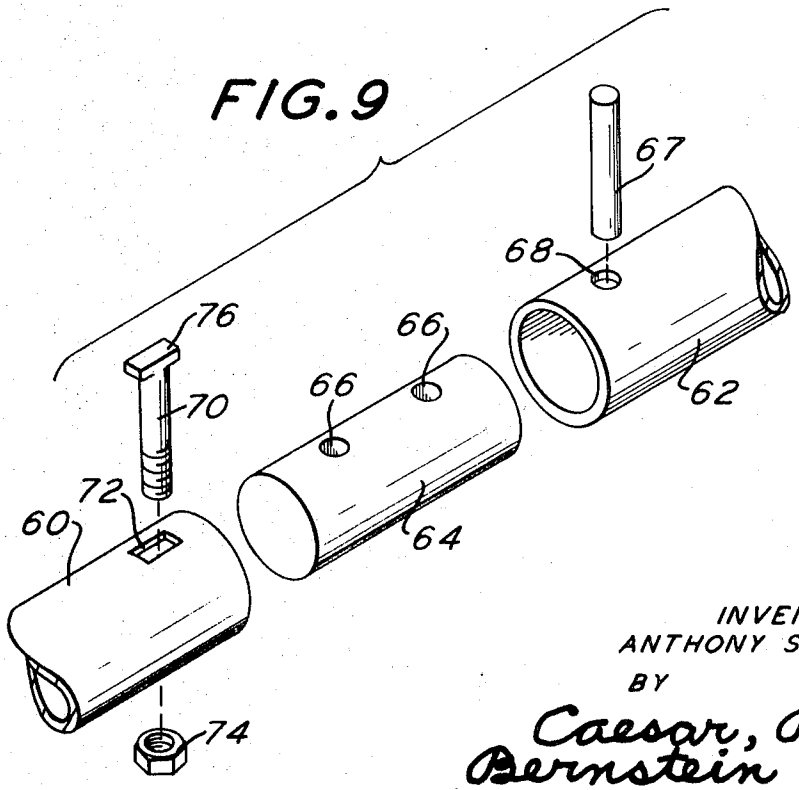


FIG. 9



INVENTOR
ANTHONY S. MILLER
BY
Caesar, Rivise, Bernstein & Cohen
ATTORNEYS.

CLOTHING RACK

This invention relates to a clothing rack, and more particularly, to a clothing rack that is adapted to be mounted on a column in a clothing store.

It is now a common practice to place clothing racks on ring-shaped structures which are supported on columns in a clothing store or department store. These columns form part of the structure of the store, and are used to support the roof or the next highest floor of the store. Generally, the columns are squares, having a 17-inch width on each side. Alternatively, the columns can be circular in cross section. The columns usually are given some decorative type of facing, such as paneling, wallpaper, or paint.

The column clothing racks presently in use utilize key-slotted brackets which are screw mounted on the columns. Supporting brackets are secured in the key slots, and a ring-shaped structure is then formed on the outer extremities of the supporting brackets. This type of structure, although it will serve its intended function of mounting clothing on a column, suffers from many disadvantages. The most serious of these disadvantages is that it takes approximately 1 hour to assemble the completed structure on the column. Additionally, once the structure has been assembled, it must be completely disassembled and reassembled in order to change the height of the rack.

Another shortcoming of the prior art structures is that the key-slotted bars must be permanently secured to the column. Accordingly, when a clothing rack is not supported on the column, the unsightly slotted bars will mar the appearance of the column. Because of this, once a column has been used for supporting a circular clothing rack, it will always contain the key-slotted bars, even after the clothing rack has been removed. If the bars are removed, then the screw holes for supporting the bars will remain in the column, thereby also resulting in an unsightly condition.

The clothing rack of this invention enjoys all of the advantages of the prior art column mounted clothing racks, while at the same time overcoming all of the aforementioned disadvantages of the prior art clothing racks. The clothing rack of this invention can be mounted on a column in approximately 5 minutes. Once the clothing rack has been set in place on the column, its vertical position on the column can be changed in a matter of minutes, without disassembling the clothing rack. There are no brackets which are screwed onto the column, and the clothing rack is supported on the column solely by the use of pressure plates. The pressure plates have cushioning surfaces which will not mar the column in use. Accordingly, the clothing rack of this invention can be mounted on any column without the necessity of permanently mounting any supporting brackets, such as the key-slotted bars of the prior art.

It is accordingly an object of this invention to provide a novel clothing rack.

It is another object of this invention to provide a novel clothing rack that is adapted to be supported by an upstanding column.

These and other objects of this invention are accomplished by providing a clothing rack comprising a loop, a plurality of bars projecting inwardly from said loop, and a mounting plate positioned at the inner end of each of said bars, said mounting plates adapted to be placed against a vertical column, and said bars being longitudinally extensible, whereby said mounting plates can be forced against said column by extending said bars, and whereby said loop will be supported by said bars when said mounting plates are forced against said column.

Other objects and many of the attendant advantages of this invention will be readily appreciated as the same becomes better understood by reference to the following detailed description when considered in connection with the accompanying drawings wherein:

FIG. 1 is a perspective view of the clothing rack of this invention, as mounted on a column;

FIG. 2 is a side elevational view, partly in section, showing the relationship of one of the bars of the clothing rack of this invention relative to the loop of the clothing rack and the supporting column;

FIG. 3 is a sectional view taken along the line 3—3 of FIG. 2;

FIG. 4 is a partial perspective view showing a modified embodiment of a mounting plate of the clothing rack of this invention and a section of a column;

FIG. 5 is a perspective view, similar to FIG. 4, and showing yet another modification of the mounting plate of the clothing rack of this invention and a section of a circular column;

FIG. 6 is a perspective view, partially in phantom, showing the mechanism for linking the bars of the clothing rack of this invention to the circular ring of the clothing rack;

FIG. 7 is an enlarged sectional view taken along the line 7—7 of FIG. 1;

FIG. 8 is a sectional view taken along the line 8—8 of FIG. 7; and

FIG. 9 is an exploded perspective view showing the elements for securing the two halves of the ring of the clothing rack of this invention together.

Referring now in greater detail to the various figures of the drawings wherein like reference characters refer to like parts, a clothing rack embodying the present invention is generally shown at 10 in FIG. 1. Device 10 basically comprises a ring 12, four mounting bars 14, and four mounting plates 16 secured to the mounting bars. Device 10 is shown as being mounted on a column 18, and with a plurality of clothes hangers 20 supported by ring 12.

Each mounting bar 14 comprises a first rod 22, a second rod 24 and a sleeve 26. Rod 22 includes a horizontal section 28 having an annular ring 30 formed at an intermediate portion thereof. Rod 22 further includes a U-shaped section 32 which terminates in a tip 34 of reduced diameter. A pin 36 passes through the U-shaped section 32 at a position near tip 34.

Rod 24 includes a horizontal section 38 with a portion thereof being externally threaded, as shown at 40. The balance of rod 24 is inclined downwardly, as shown at 42. The inclined section 42 of rod 24 is secured to a mounting plate 16, as by weld 44.

The horizontal sections 28 and 38 are held in horizontal alignment by sleeve 26. Horizontal section 28 is freely rotatable in one end of sleeve 26, with the annular ring 30 abutting the outer edge 46 of the sleeve. The end of bar 22 abuts an annular shoulder 48 which is formed in sleeve 26. Sleeve 26 includes internal threads 50 in which threaded section 40 of rod 24 is received. One end of sleeve 26 has an enlarged internal diameter 52 adjacent threads 50. This facilitates the insertion of the threaded section 40 of rod 24 into the threads 50 of the sleeve. Sleeve 26 is provided with a pair of external flattened sections 54 which are adapted to receive a wrench, for a purpose to be described hereinafter.

In a first embodiment of this invention, the mounting plate 16 comprises an angle bar 56 (FIG. 3) having a cushioning facing 58 formed thereon. Facing 58 can be any nonmarring, resilient material, such as rubber, plastic or foam. The facing can be adhesively secured in place, or formed directly on the metal face of angle bar 56. Rubber is a preferred material for the facing, in view of its resilient qualities and the frictional grip it will provide on column 18.

Ring 12 is formed from a pair of semicircular tubes 60 and 62 (FIG. 1). The two semicircular sections 60 and 62 are joined to form the ring 12 through the use of a pair of solid circular rods 64 (FIGS. 7 to 9). Each rod 64 has a pair of holes 66 drilled therethrough. Rod 64 is slightly smaller in diameter than the internal diameter of tubes 60 and 62.

In use, rods 64 are placed in the open ends of tube 62 and inserted until half their lengths are covered by the tube. Thereafter, the other tube 60 is telescoped over the exposed portions of rods 64. With the tubes 60 and 62 in an abutting relationship, as shown in FIG. 8, pins 67 are inserted into holes 68 in tube 62 and forced through one of the holes 66 in rods 64. Accordingly, the rods 64 are held in the ends of tube 62 by the forced fit of pins 67 through the rods and tubes, as shown in FIG. 8.

The tube 60 is then secured on the free ends of rods 64 by bolts 70 which pass through an upper hole 72 in tube 60, through hole 66 in rod 64 and out through a lower hole in tube 60. The bolts 70 are secured in place through nuts 74. As seen in FIG. 9, the head 76 of bolt 70 has a rectangular cross section and hole 72 in tube 60 has an identical cross section. In this way, when the bolt 70 is inserted in hole 72, the bolt will be prevented from rotating when the nut 74 is applied. As seen in FIGS. 7 and 8, the top of head 76 of bolt 70 is flush with the top of tube 60. In this way, hangers 20 can freely be slid around the upper surface of ring 12.

Ring 12 is provided with four equally spaced holes 78 in its bottom surface (FIG. 6). Each hole 78 includes a circular central portion 80 and a pair of diametrically opposed slots 82. Each mounting bar 14 is secured to ring 12 by inserting tip 34 of rod 22 into hole 78. During the insertion of the rod, pin 36 is aligned with slots 82. When the rod is fully inserted, tip 34 is received in an upper hole 84 of ring 12 (FIG. 2). Thereafter, rod 22 is locked in place in ring 12 by rotating the rod approximately 45° to the position shown in phantom at 22' in FIG. 6. Since the pin 36 is no longer aligned with slots 82, the ring 12 cannot be removed from the rod 22, as is apparent from FIG. 2. As further seen in FIG. 2, tip 34 is flush with the top of ring 12, thereby providing a smooth continuous surface for the sliding of hangers on the ring 12.

The clothing rack of this invention is assembled on a column 18 by first separating ring 12 into the two circular tubular sections 60 and 62. This is accomplished by removing bolts 70 from the two ends of tubular section 60, and sliding tube 60 off rods 64. Thereafter, sleeves 26 (FIG. 2) are rotated in a clockwise direction to threadedly draw rods 24 into the sleeves. In this connection, it is noted that the rotation of sleeve 26 will have no effect on rod 22, since the sleeve is freely rotatable relative to rod 22. However, the rotation of sleeve 26 will either draw rod 24 further into the sleeve, along threads 40, or force rod 24 from the sleeve, depending on the direction of rotation of the sleeve. Flattened areas 54 on sleeve 26 are provided to permit the placing of a wrench over the sleeve in order to rotate the sleeve in either direction. The rods 24 are drawn into the sleeve a sufficient distance to have any two adjacent mounting plates separated by a distance greater than the width of column 18. Thus, if column 18 is square, having a width of 17 inches on each side, the rods 24 are drawn into sleeve 26 a sufficient distance to render the distance between the centers of adjacent mounting plates greater than 17inches.

After the rods 24 have been moved, the two semicircular tubes 60 and 62 are placed around column 18, with their ends abutting, and with the rods 64 received in the open ends of tube 60. Thereafter, bolts 70 are inserted and secured in place by nuts 74. The ring 12 is then raised to the desired height on column 18, its horizontal orientation is checked through the use of a spirit level, and mounting plates 16 are brought into abutment with the corners of column 18. This is accomplished by rotating sleeves 26 in a counterclockwise direction, thereby advancing rods 24 out of the sleeves, and thereby forcing mounting plates 16 into abutment with the corners of the column 18. The rotation of the sleeves 26 is continued until all of the mounting plates 16 are securely against column 18.

The fully assembled condition of the clothing rack 10 on a column is shown in FIG. 1. The pressure of the mounting plates 16 against the column is sufficient to maintain the rack 10 in any preset position. The clothing rack will be maintained in this position, regardless of the number of garments placed on the rack. The sliding of the rack down the column is prevented by the use of the resilient facing 58 on the mounting plates 16 and the force on the plates. Additionally, the facing 58 will prevent the marring or scratching of the surface of the column 18.

The use of the inclined section 42 of the mounting bar 14 aids in maintaining the preset position of the clothing rack 10. In this connection, as seen in FIG. 2, the placing of any weight on ring 12 will tend to rotate the ring around the outer extremity of mounting bar 14, which is adjacent weld 44. Thus, since the outer extremity is lower than the ring 12, a rotational force will be placed on the outer extremity of the mounting bar. This will in turn place a pressure against the portion of the mounting plate 16 which is below the weld 44. Thus, the weight of the clothing on ring 12 will tend to force the mounting plates 16 into the column, rather than tending to slide the mounting plates 16 down the column, which would occur if the ring 12 were at the same horizontal level as the outer extremity of the mounting bar 14.

The use of the U-shaped section 32 on mounting bar 14 facilitates the sliding of hangers 20 around the ring 12. Thus, the heads of the hangers will readily bypass each mounting bar 14 as they are slid over the mounting bar in passing around the ring 12. If rods 22 of the mounting bar 14 projected horizontally outward, they would provide a stop for the sliding movement of the hangers 20.

A modified embodiment of the mounting plate is generally shown at 86 in FIG. 4. Mounting plate 84 comprises a square metal plate 88 having a resilient facing 90 secured thereon. Metal plate 88 is welded to the mounting bar 14. The embodiment of the invention shown in FIG. 4 is identical in all respects to the embodiment shown in FIG. 1, with the exception of the fact that the angled mounting plate has been replaced by the square mounting plate. Utilizing the embodiment shown in FIG. 4, the rack 10 is mounted on the flat face of the wall of a column 18, instead of at a corner. The clothing rack will still function in an identical manner.

A third embodiment of a mounting plate utilizable in carrying out this invention is generally shown at 92 in FIG. 5. In this embodiment, the mounting plate comprises an arcuate metal plate 94 having an arcuate resilient facing 96 thereon. In all other respects, this embodiment of the invention is identical to the embodiment shown in FIG. 1. This embodiment is adapted for use on a circular column 98. Thus, the contour of the arcuate mounting plate is identical to the contour of the circumference of the column.

It is thus seen that the clothing rack of this invention provides a device that is easily assembled on a column, and which will support a large amount of clothing. The height of the device on the column is easily adjusted by relaxing the pressure against mounting plates 16 through the rotation of sleeves 26. Once the new height has been set, the mounting plates are again forced against the column. By varying the contour of the mounting plates, the device of this invention is adapted for use on columns of any shape. Additionally, by varying the lengths of rods 24, the device can be used on columns of any width or diameter, without affecting the diameter of ring 12, or the diameter of ring 12 can be increased.

Through the use of the resilient facing on the mounting plate, there is no damage to the column used to support the clothing rack of this invention. No permanent hardware need be secured on the column, and, accordingly, when the column does not have the rack thereon, it will retain its original attractive appearance. The device of this invention can be made of any materials generally known to the art of clothing racks. Chrome-plated steel is a preferred material, but other materials, such as stainless steel or aluminum can be used. Additionally, a plastic covering can be placed over the ring, the supporting rods and the mounting plates in order to color coordinate the clothing rack with the column or with the decor of the store.

The ring 12 need not be circular, but can be of any other loop form such as square, hexagonal or free form. The ring shape shown is preferred because the hangers 20 are easily slid around the ring.

Without further elaboration, the foregoing will so fully illustrate my invention, that others may, by applying current or future knowledge, adopt the same for use under various conditions of service.

What is claimed as the invention is:

1. A clothing rack comprising a rigid, loop-shaped member, said member comprising a plurality of separable sections, means to join said sections, a plurality of bars projecting in-

wardly from said member and a mounting plate positioned at the inner end of each of said bars, said mounting plates being adapted to be placed against a vertical column, and said bars being longitudinally extensible, whereby said mounting plates can be forced against said column by extending said bars and whereby said member will be supported by said bars when said mounting plates are forced against said column.

2. The clothing rack of claim 1 wherein each of said sections is tubular, and said means to join said sections comprises a rod inserted in said tubular sections at each position where said tubular sections abut.

3. The clothing rack of claim 2 wherein said rod is secured within each of said tubular sections.

4. A clothing rack comprising a rigid, loop-shaped member, a plurality of bars projecting inwardly from said member and a mounting plate positioned at the inner end of each of said bars, said mounting plates being adapted to be placed against a vertical column, each of said mounting plates comprising a rigid backing plate having a resilient rubber facing thereon, said facing being adapted to contact said column, and said bars being longitudinally extensible, whereby said mounting plates can be forced against said column by extending said bars and whereby said member will be supported by said bars when said mounting plates are forced against said column.

5. A clothing rack comprising a rigid, loop-shaped member, a plurality of bars projecting inwardly from said member and a mounting plate positioned at the inner end of each of said bars, said mounting plates being adapted to be placed against a vertical column, each of said mounting plates comprising an angle plate, said column having a plurality of corners thereon, with each mounting plate being adapted to contact said column at one of said corners, and said bars being longitudinally extensible, whereby said mounting plates can be forced against said column by extending said bars and whereby said member will be supported by said bars when said mounting plates are forced against said column.

6. A clothing rack comprising a rigid, loop-shaped member, a plurality of bars projecting inwardly from said member and a mounting plate positioned at the inner end of each of said bars, said mounting plates being adapted to be placed against a vertical column, each of said bars comprising a pair of rods, with said rods being held in aligned relationship by a sleeve, with one of said rods being freely rotatable within said sleeve and the other of said rods being threadedly secured in said sleeve, whereby the rotation of said sleeve will draw the other of said rods into said sleeve or force the other of said rods from said sleeve, depending on the direction of rotation of said sleeve, with said mounting plate being forced against said column by forcing the other of said rods from said sleeve, thereby supporting said member.

7. The clothing rack of claim 6 and further including means associated with said sleeve for aiding in rotating said sleeve.

8. The clothing rack of claim 7 wherein said means to aid in rotating said sleeve comprises a pair of flattened areas on the exterior surface of said sleeve, said flattened areas adapted to receive the jaws of a wrench.

9. A clothing rack comprising a rigid, loop-shaped member, a plurality of bars projecting inwardly from said member and a mounting plate positioned at the inner end of each of said bars, said mounting plates being adapted to be placed against a vertical column, and said bars being longitudinally extensible and comprising a pair of rods, said rods being held in aligned relationship by a sleeve, one of said rods having a portion thereof that is angled downwardly from the other portion of said one of said rods, said angled portion being secured to said mounting plate, with the end of said portion secured to said mounting plate being at a lower vertical elevation than said loop-shaped member, whereby pressure on said loop-shaped member will tend to rotate said loop-shaped member around the end of said portion secured to said mounting plate, and whereby said mounting plate can be forced against said column by extending said bars and whereby said member will be supported by said bars when said mounting plates are forced against said column.

10. A clothing rack comprising a rigid, loop-shaped member, a plurality of bars projecting inwardly from said member and a mounting plate positioned at the inner end of each of said bars, each of said bars having a U-shaped section at the end adjacent said loop-shaped member, with one leg of said U-shaped section being secured to the underside of said loop-shaped member, whereby hangers may be slid around said loop-shaped member with their ends passing through said U-shaped section, said mounting plates being adapted to be placed against a vertical column, and said bars being longitudinally extensible, whereby said mounting plates can be forced against said column by extending said bars and whereby said member will be supported by said bars when said mounting plates are forced against said column.

11. A clothing rack comprising a rigid, loop-shaped member, a plurality of bars projecting inwardly from said member and a mounting plate positioned at the inner end of each of said bars, said mounting plates being adapted to be placed against a vertical column, and said bars being longitudinally extensible, and comprising a pair of rods, said rods being held in aligned relationship by a sleeve, one of said rods being secured to said mounting plate and the other of said rods being secured to said member, said one of said rods being secured to said mounting plate at a lower vertical elevation than the vertical elevation at which said other of said rods is secured to said member, whereby pressure on said member will tend to rotate said member around the inner ends of said bars, whereby said mounting plates can be forced against said column by extending said bars and whereby said member will be supported by said bars when said mounting plates are forced against said column.

12. A clothing rack comprising a rigid, loop-shaped member, a plurality of bars projecting inwardly from said member and a mounting plate positioned at the inner end of each of said bars, each of said bars being secured to the underside of said loop-shaped member, each of said bars including a vertical component projecting downwardly from said loop-shaped member at the point of securement, whereby hangers may be slid around said loop-shaped member with their ends avoiding contact with said bars, said mounting plates being adapted to be placed against a vertical column, and said bars being longitudinally extensible, whereby said mounting plates can be forced against said column by extending said bars and whereby said member will be supported by said bars when said mounting plates are forced against said column.