United States Patent

[11] 3,595,404

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[21] Appl. No. **791,279**
[22] Filed **Jan. 15, 1969**
[45] Patented **July 27, 1971**

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[54] **SHELF**
5 Claims, 3 Drawing Figs.

[52] **U.S. Cl.** **211/49,**
211/90, 211/106, 211/133
[51] **Int. Cl.** **A47f 5/08,**
A47f 7/00
[50] **Field of Search** 211/90, 88,
106, 134, 153, 126, 133, 42, 49, 50, 45, 181, 41;
248/DIG. 3; 206/44, 44.11

[56] **References Cited**

UNITED STATES PATENTS

2,863,567	12/1958	Friar	211/90
2,897,975	8/1959	Rubenstein	211/106
2,934,212	4/1960	Jacobson	211/49
2,996,192	8/1961	Dell et al.	211/106 X

FOREIGN PATENTS

437,522	1948	Italy	211/106

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ABSTRACT: A shelf for articles of uniform height and each having a thickness in which the shelf is so arranged that the articles will lie back against the back of the shelf but will lie in a position in which an overlying article does not completely overlap the article which it overlies in order that visual observation permits immediate examination of every article on the shelf. The shelf base and back are tilted rearwardly with the back extending at an obtuse angle with respect to the base.

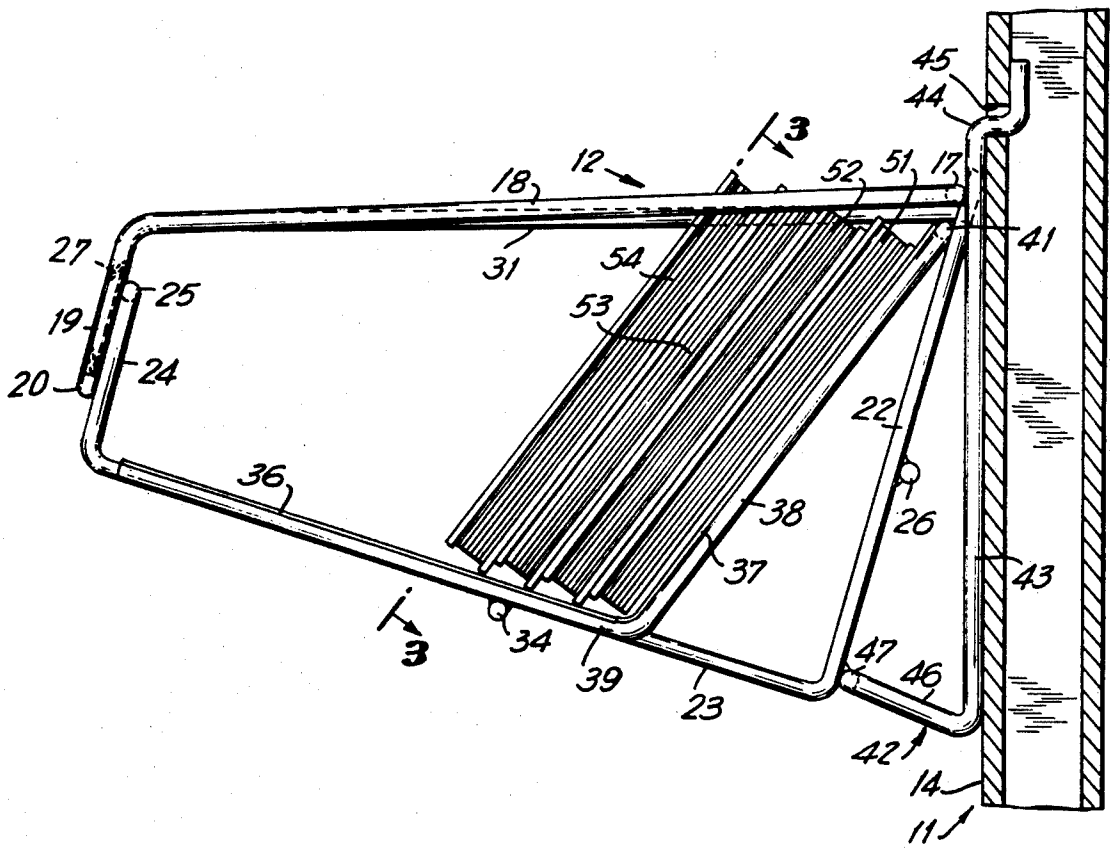


FIG. 1

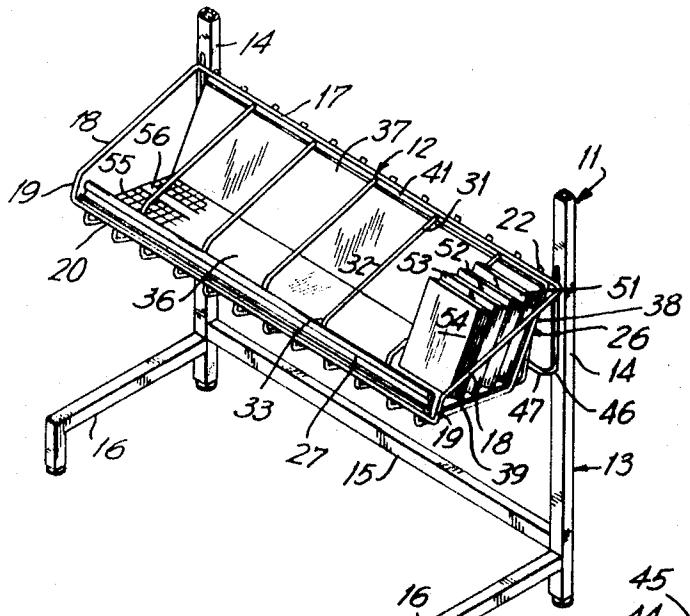


FIG. 2

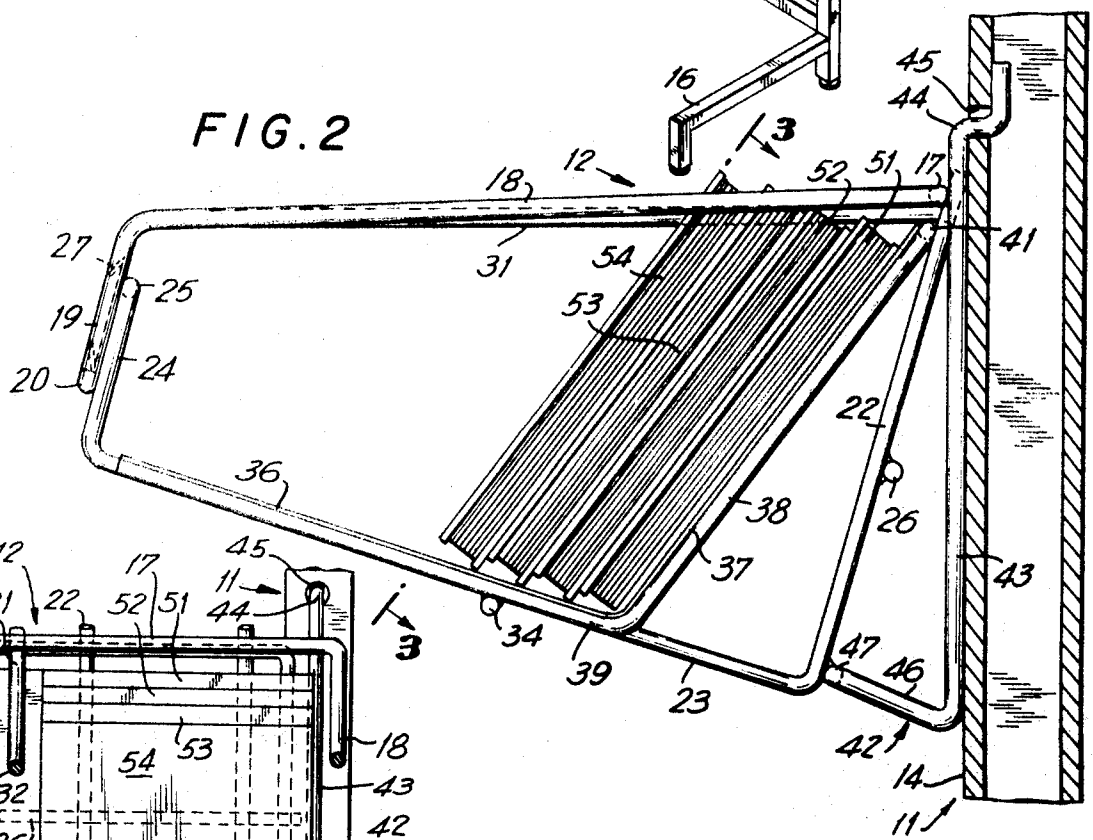
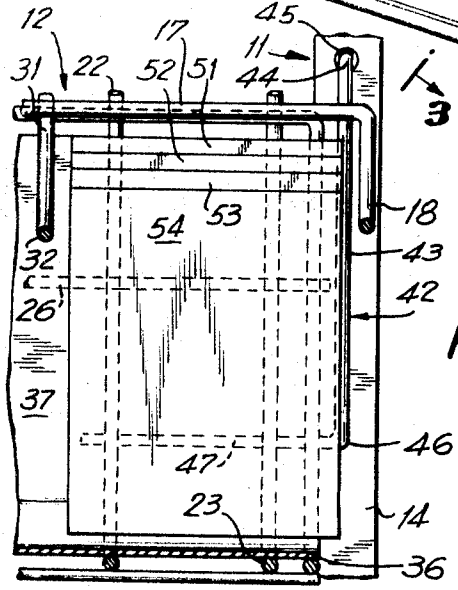


FIG. 3



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SHELF

BACKGROUND OF THE INVENTION

This invention relates generally to a shelf of the type used to hold and display for sale articles of merchandise such as books. The shelf is generally divided into a number of pockets with the width of the pockets being approximately that of the books to be received therein. Shelves of this type are often used for the point-of-purchase display of paperback books. Usually, several copies of a title are stored in each pocket with different titles being stored in the different pockets. In such manner, the front cover of each title is visible to the consumer. Similar shelves can also be utilized by book distributors for storing numerous titles whereby, in filling an order, it is a simple matter for the clerk to pick out the titles.

However, especially at the retail level, the shelves often become thoroughly disorganized as a result of consumers removing a title from one pocket, browsing through it and then replacing it in an incorrect pocket. Thus, the title that appears at the front of a pocket may not be indicative of the other titles remaining in the pocket, making it impossible to conveniently take an inventory of titles, which would be needed for purposes of reorder. In the prior arrangements, the books in any particular pocket completely overlap so long as the books are of the same size, and thus the only book or title visible is the one which is outermost.

SUMMARY OF THE INVENTION

Generally speaking, in accordance with the invention, means are provided to permit at least a partial visual examination of every book in a pocket while maintaining the books in neat position for storage and display. The entire pocket is tilted rearwardly so that the books lay back against the rear of the pocket. The included angle between the rear and the base of the pocket is greater than 90°, thereby supporting each consecutive book at a different level to permit a portion of one book to extend above the book that covers it, permitting the portion to be visually examined. This permits a rapid visual counting of the number of books in a pocket. Furthermore, as the cover of substantially every different title is a different color or has different markings, a quick visual inspection will disclose whether all titles in a pocket are the same. If they are not, the incorrect title or titles can be removed and the shelf can be properly reorganized. Also, means can be provided along the base of the shelf to effectively divide the shelf into sections that will immediately visually disclose when the shelf is, for example, half full.

Accordingly, it is an object of this invention to provide an improved shelf for articles of merchandise, such as books, which will readily support the books in neat position while permitting a visual sighting of each book even though they be of the same size.

Another object of this invention is to provide an improved shelf for receiving and supporting articles of merchandise, such as books, which permits a quick visual check to determine whether all books in any particular pocket are of the same title. A further object of this invention is to provide an improved shelf for receiving articles of merchandise, such as books, and which visually indicates information as to the number of books remaining in any particular pocket on the shelf.

Still other objects and advantages of the invention will in part be obvious and will in part be apparent from the specification.

The invention accordingly comprises the features of construction, combination of elements, and arrangement of parts which will be exemplified in the construction hereinafter set forth, and the scope of the invention will be indicated in the claims.

BRIEF DESCRIPTION OF THE DRAWING

For a fuller understanding of the invention, reference is had to the following description taken in connection with the accompanying drawing, in which:

FIG. **1** is a perspective view of a display rack to which is mounted a shelf constructed in accordance with a preferred embodiment of the instant invention;

FIG. **2** is a partial side elevational view, at an enlarged scale, of the shelf and rack shown in FIG. **1**; and

FIG. **3** is a partial sectional view taken **3–3** of FIG. **2**.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to Fig. **1**, a rack **11** is shown as consisting of a shelf **12** and a support base **13**. The base **13** is indicated for environmental purposes and consists of upstanding members **14**, a cross member **15** and leg members **16**. Base **13** is typical of a base that might be used if it is desired to support the shelf in a free standing manner. If it is desired to support the shelf from a wall, upstanding members **14** could be secured to the wall or, in lieu thereof, pegboard could be provided secured to the wall. Base **13** forms no part of the instant invention except as is necessary to support shelf **12**.

In the embodiment shown in the drawing, shelf **12** is principally fabricated of wire members which are preferably welded to form a rigid unit. An upper rear element **17** extends along the back of the shelf at the upper edge thereof and is integral with forwardly extending side elements **18** which slope downwardly to define an opening of decreasing height. The forward end of side elements **18** are integral with front elements **19** which define the front of the shelf and a horizontal front element **20** extends along the front of the shelf between front elements **19** to define the leading edge of the shelf. A rear element **22** is welded at its upper end to upper rear element **17** and extends downwardly along the rear portion of the shelf. Rear element **22** is integrally connected to a bottom element **23** which extends forwardly at the bottom of the shelf and preferably forms an angle of 90° with rear element **22**. At the front of bottom element **23** an integral forward element **24** extends upwardly, preferably at an angle of 90° with respect to bottom element **23** and forward element **24** is welded to horizontal front element **20** to form a rigid frame. In the embodiment shown, 12 elements consisting of rear element **22**, bottom element **23** and forward element **24** are provided. If desired, the top ends of each adjacent pair of forward elements **24** may be integrally joined by a connecting element **25** for greater rigidity and ease of fabrication. A horizontal rod extends across the rear of rear element **22** and is welded thereto. If desired, a card-receiving channel **27** may be secured to forward element **24** to provide a channel for receiving a printed card or sign identifying the material to be received in the shelf. A plurality of pocket-defining elements **31** are provided to divide the shelf into a number of pockets. The pocket-defining element, as shown, is in the form of an upper rod **32** welded at one end to upper rear element **17**. The upper rod extends forwardly and slopes downwardly substantially at the angle of forwarding extending side elements **18** and the forward end of upper rod **32** turns downwardly to form a front rod **33** which is welded to horizontal front element **20**. A horizontal lower rod **34** extends transversely and is connected to bottom element **23** to further increase the rigidity of the unit.

A shelf bottom **36** overlies bottom element **23** to define the bottom of the shelf on which the articles of merchandise will rest. Extending upwardly at an obtuse angle from the rear edge of shelf bottom **36** is shelf back **37** and shelf back **37** forms a surface against which the back sides of the articles of merchandise will rest. Shelf back **37** is secured at opposite end edges to support elements **38** which extend from shelf bottom support elements **39** with a connecting rod **41** extending across the upper edge of shelf back **37** between the upper ends of shelf back support elements **38**. Connecting rod **41** is secured to rear element **22** to maintain the shelf back in the

position shown in FIG 2. The shelf bottom is maintained in position by being secured to bottom element 23. A hanger element 42 is provided at each end of the shelf for supporting the shelf in proper position. In the embodiment shown, the hanger elements support the shelf on upstanding members 14 but, as noted above, the upstanding members need not be used and it is only necessary that hanger elements 42 be constructed so as to cooperate with an object that will support the shelf while holding it in a properly oriented position. In the embodiment shown, each hanger element 42 consists of a vertical support 43 having a connecting element 44 at the upper end thereof to be received in a suitable aperture 45 in upstanding member 14. Projecting forwardly from the lower end of vertical support 43 is a spacer member 46 having an in-turned end 47 which is secured to rear element 22. With connecting element 44 received in aperture 45 and with vertical support 43 lying along the surface of upstanding member 14, at each side of the shelf, the shelf will be supported in the FIG. 2 position. The weight of the shelf pivoting about the connection of connecting element 44 with upstanding member 14 will maintain vertical support 43 against the surface of upstanding member 14.

The various elements heretofore described represent a typical construction of a wire rack or shelf. The shelf need not be constructed as described for the preferred embodiment and need not be fabricated of wire. Critical to the invention is the position and orientation of shelf bottom 36 and shelf back 37. Both the shelf bottom and shelf back are inclined rearwardly with respect to the horizontal as clearly shown in FIG. 2. This causes articles of merchandise to lean rearwardly so as not to fall out of or slide forwardly in the shelf. The rearward incline of shelf bottom 36 and shelf back 37 is effected by the general configuration of hanger elements 42. Also critical to the invention is the orientation of shelf back 37 with respect to shelf bottom 36 whereby an obtuse angle (one greater than 90°) is described.

In the embodiment shown in the drawing, four books 51, 52, 53 and 54 are placed in one of the pockets of the shelf. Rear book 51 has its rear bottom edge resting on shelf bottom 36 with its rear side overlying the surface of shelf back 37. With the next book 52 of identical size to book 51 overlying book 51, the bottom rear edge of book 52 will rest on shelf bottom 36 and the rear surface of book 52 will overlie the front surface of book 51. Due to the obtuse angle between shelf bottom 36 and shelf back 37, and due to the thickness of each book, a small portion of the front surface of book 51 will project above book 52 so that book 51 will not be completely hidden from view by book 52. For the same reasons, a small amount of the front cover of book 52 will be visible behind book 53 and a small portion of the front cover of book 53 will be visible behind book 54.

With the four books in the shelf, an individual can visually inspect the shelf and see whether all the books in a particular pocket look the same at the upper edge of the front surface. Since different titles generally have covers of different colors or carry printing or other indicia which vary between titles, the ability to see a small portion of all covers will allow the person inspecting the shelf to readily determine whether all titles in the pocket are the same. Also, the individual inspecting the shelf can readily count the number of books in each pocket, for inventory purposes, since a portion of each book will be visible. Thus, with a shelf constructed in accordance with the instant invention, an inventory of the articles on the shelf can quickly be taken. The preferred embodiment of the invention has been described in connection with books since wire shelves of the type shown herein are commonly in use for the point-of-purchase display of books and especially paperback books. However, it will be understood that any articles of merchandise which can be accommodated by a pocket in the shelf and which have a thickness to permit an adequate spacing between the front surface of adjacent overlying articles can make use of the instant invention for checking inventory and being certain that all articles in any particular pocket are the same.

A further feature of the invention is means to provide a ready check as to the state of inventory. For example, shelf bottom 36 could be formed of perforated sheet metal as indicated at 55 in FIG. 1 and a wide, nonperforated band 56 could extend the full width of shelf bottom 36 halfway between the front and the rear of the pocket. For any pocket, a visual inspection thereof would immediately disclose when the pocket is half or less than half full. In other words, if band 56 is visible, the pocket is at least half empty and it would be timely to reorder the articles of the depleted inventory. A more accurate count of articles in a pocket could be had by laying over the shelf bottom of each pocket a card having lines scribed thereon which are spaced equally to the thickness of the articles to be received in the pocket. If the lines are numbered, a visual inspection would immediately disclose that, for example, only four articles remained in the pocket. The cards could be made readily replaceable for articles of different thickness.

It will thus be seen that the objects set forth above, among those made apparent from the preceding description, are efficiently attained and, since certain changes may be made in the above construction without departing from the spirit and scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawing shall be interpreted as illustrative and not in a limiting sense.

What I claim is:

1. In a shelf for receiving and supporting articles of merchandise in overlying relationship with the front face of each article facing outwardly, the combination comprising shelf bottom defining means for receiving and supporting a lower edge of each of said articles, said shelf bottom defining means having an article-receiving surface which slopes downwardly and rearwardly at an acute angle with respect to the horizontal, shelf back defining means for receiving and supporting the rear surface of one of said articles, said shelf back defining means having an article-receiving surface which slopes upwardly and rearwardly at an acute angle with respect to the vertical, and support means for rigidly supporting said shelf bottom and shelf back defining means at said angles, said article-receiving surface of said shelf back defining means sloping upwardly and rearwardly at an obtuse angle with respect to said article-receiving surface of said shelf bottom defining means, said support means including at least two hanger elements, each of said hanger elements including a connecting element for connecting said hanger element to a vertical surface, a vertical support adapted to overlie the vertical surface for vertical orientation of said support means and a spacer member, said spacer member being connected to said shelf proximate a lower portion of said shelf back defining means for spacing said lower portion from the vertical surface, the upper portion of said vertical support being secured to said shelf proximate the upper portion of said shelf back defining means for spacing the upper portion of said shelf back defining means closer to the vertical than the lower portion of said shelf back defining means.

2. A shelf for receiving and supporting articles of merchandise as claimed in claim 1 wherein said shelf has a longitudinal extent and including means defining a plurality of pockets extending transversely of said longitudinal extent.

3. A shelf for receiving and supporting articles of merchandise as claimed in claim 1 wherein said shelf bottom and shelf back defining means are formed of planar sheets joined at the intersection thereof.

4. A shelf for receiving and supporting articles of merchandise as claimed in claim 1 wherein said shelf has a longitudinal extent and said shelf bottom defining means includes indicator means parallel to the longitudinal axis of said shelf for indicating the extent to which said shelf is filled with articles of merchandise.

5. A shelf for receiving and supporting articles of merchandise as claimed in claim 4 wherein said shelf bottom defining means includes a planar sheet having a plurality of perforations and said indicator means is formed as a portion of said planar sheet free of perforations.