LOCKABLE RACK FOR ELONGATE ARTICLES

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Fig. 1.

Fig. 2.

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LOCKABLE RACK FOR ELONGATE ARTICLES
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2 Claims.

This invention relates to a rack for holding a plurality of elongate articles, and particularly to a collapsible rack for holding wine bottles and the like.

It is desirable to the fullest enjoyment of wines that these be stored in such fashion that the cork in the wine bottle be kept wet so that is remains swollen and access of air is not permitted.

It is in general the broad object of the present invention to provide an improved rack for wine bottles for example.

While wine bottle racks have been utilized heretofore, there has not been available upon the market a relatively simple and inexpensive device readily suited to the storage of wine bottles. The usual installations have been of a permanent nature, relatively costly, not suited to transport or the needs of the relatively small household.

A further object of the present invention is to provide a practically inexpensive rack of such construction that it can be moved about in a flat locked condition and then set up for use wherever desired in an erected locked condition.

In one embodiment of the invention, the rack includes front and rear support panels which are movable, by virtue of two spacer elements hinged at each end to the ends of the panels, between (1) an aligned position in which wine bottles or the like can be stored in respective pairs of supports in the panels, and (2) a collapsible position in which the panels are touching so that the rack is flat for carrying or shipping purposes. Additionally, the rack includes a locking element having a hook on one end and at the other end is hinged to the top edge of one panel, the other panel having a socket or receptacle for receiving the hook, whereby the panels may be locked in their aligned position. Alternatively, the same hinged locking member may be employed to lock the panels in their collapsed position, by rotation thereof over the top edge of the panel which carries the hook receptacle, effecting a sort of snap-locking maneuver.

It is another object of this invention to provide such a rack as just described. Further objects and advantages of this invention will become apparent by the appended claims and the following detailed description, in conjunction with the drawings in which:

FIGURE 1 is a perspective view of the rack embodied in accordance with this invention; FIGURE 2 is a plan view of the rack in FIGURE 1; FIGURE 3 illustrates a portion of the FIGURE 1 rack collapsed to a flattened condition; FIGURE 4 is a plan view of the collapsed rack in FIGURE 3.

The rack illustrated in FIGURE 1 has a front support panel 10 and a rear support panel 12, which are separated an amount determined by folding spacers 14 and 16 in conjunction with the respective hinge connections 18 and 20 located at the front and rear ends of each spacer 14, 16.

Each of the front and rear panels 10 and 12 includes side wire supports or rods 22 and 24 and similar top rods 26. As illustrated, the side and top rods in each panel are integrally connected at their rounded corners, the side rods being returned at their lower ends to form respectively foot-like elements 28 and 30.

Extending between each of the side rods 22 and 24 of each panel are respective wire support rods 32, 34 and 36, which are fixedly connected at their ends to the side rods, for example as by welding. Each of these wire support rods 32, 34 and 36 are somewhat undulating in extent in that at successive bottle supporting positions they follow a downwardly curved path in between adjacent high points. At the middle of these high points are respective vertical wire rods 38, 40 and 42 which aid in forming compartmental divisions or ports for receiving the bottles. These vertical rods are secured, as by welding, to each of the horizontal supports 32, 34 and 36, and also to the top rods 26, on the rear side of each.

As is apparent from FIGURE 1, the downwardly curved portions of the horizontal support rods, considering the portions in pairs consisting of one from the front panel on the same level and aligned with another on the back level, form pairs of supports for the respective articles or bottles to be held or stored in the rack. As an example, one bottle 44 is shown stored in a level position while resting on the rear curved support 46 and the front curved support 48. To keep the bottles from moving too far rearwardly, respective rear stops 49 are provided for each of the tiers.

As apparent from FIGURE 1, the respective storage ports for different bottles are aligned from front to back when the rack is in its erected position ready for use. It may be maintained in its erected position by virtue of a single locking means 50. This locking means includes a wire rod member 52 which at its rear end is hingedly connected to the top element 26 of the rear panel 12 by hinge 54. It will be apparent that this hinge extends in the same direction as the top element 26, and that therefore the locking member 52 may be rotated in a plane which is perpendicular to panel 12. At its front end, locking member 52 includes a hook 56 which can be rotated in and out of the socket or receptacle 58 which is fixedly secured to the upper end of the vertical rod 40 of the front panel 16. Accordingly, when the rack is in its illustrated, erected position for use, it can be locked in that position by inserting the locking hook 56 into the socket 58. This prevents any relative side-wise movement of the front and rear panels 10 and 12, as is possible, when the panels are unlocked, by virtue of the hinge connections 18 and 20 for each of the spacer rods 14 and 16.

These hinge connections 18 and 20 are respectively secured fixedly to the front and rear side elements 22 and 24. The vertically disposed ends of spacer elements 14 and 16 are rotatable in the respective sockets of the hinge connections 18 and 20 and protrude downwardly therefrom. As illustrated, these protruding ends are slightly bent so that spacers 14 and 16 cannot be removed from their hinge sockets but are secured so as to prevent any problem of parts being likely to get lost in the process of carrying or shipping the rack.

By using hinge connections 18 and 20, the rack may be collapsed, when locking hook 56 is rotated up out of its socket 58. In collapsing the rack, the front and rear panels move transversely of each other, i.e., relatively side-wise in either direction, for example to the position illustrated in FIGURES 3 and 4. The front and rear panels are then contiguous so that the rack is as flat as possible. In this flattened position, the then upwardly rotated locking member 52 may be downwardly rotated over the top rod 26 of the front panel 10 and flat against the front panel, to cause the top rod thereof to snap in under hinge 54, whereby the two panels are securely locked together.

In the side-wise relative movement of the panels to the flattened position, it is apparent that the front and back supports, for example supports 46 and 48 in FIGURE 1, which were aligned in the erected position, are now misaligned in the flattened
position. The amount of such misalignment is substantially equal to the spacing between the front and rear panels when they are erected for use, since that spacing is determined by spacers 14 and 16 and those spacers remain hingedly connected during the folding or collapsing process.

It is therefore apparent that this invention has provided for all of the objects and advantages herein mentioned. Other objects and advantages and even modifications of the invention will be apparent to those of ordinary skill in the art upon reading this disclosure. However, it is to be understood that this disclosure is exemplary and not limited, the scope of the invention being defined by the appended claims.

What is claimed is:

1. A rack for holding a plurality of elongate articles, comprising:
   - two generally parallel support panels each having a plurality of corresponding supports which, considering alignable ones from each panel, are pairs of supports for respectively holding different ones of said articles,
   - means hingedly connected to each of said panels for causing所述 panels to be movable between one position wherein they are spaced apart with the said support pairs generally aligned and a second flatter position wherein the panels are substantially contiguous with the support pairs transversely misaligned, and
   - a single locking means secured to one of said panels for locking the panels in either of said positions,
   - said locking means further including a hook receptacle secured to the other panel for receiving said hook to lock said panels in said one position, said locking member being rotatable out of said hook receptacle by virtue of its said hinged connection to allow movement of the panels to said second position whereupon said locking member is rotatable over said other panel to lock the panels together in that second flatter position.

4. A collapsible rack for holding elongate articles horizontally and being lockable in either its collapsed condition or in its erected position of use, comprising:
   - front and rear support panels each having a plurality of horizontally extending support rods together forming a plurality of pairs of supports for different ones of said articles,
   - each of said panels having corresponding side and top support members,
   - means, including two spacer elements each hinged at opposite ends to corresponding ones of said side support rods, for causing said said panels to be movable between said erected position wherein they are spaced apart with the supports in each said pair being aligned to receive respective ones of said articles, and said panels being flat against each other and the supports of each pair are misaligned substantially the distance said panels are apart when in said erected position, and
   - a hook locking means including a member having an inwardly extending hook at one end and being hinged at the other end to and in the direction of the said top support members of one of said panels, the other panel having adjacent its said top support member a vertically extending receptacle for receiving said hook to lock the panels in said erected position, said locking member being foldable over the top support of said other panel when the panels are in said collapsed position to lock same therein.

5. A rack as in claim 4 wherein said two spacer elements are securely hinged.

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