

[54] BIKE RACK HOIST

[75] Inventor: William G. Ballenger, Deerfield, Ill.
 [73] Assignee: Central Specialties Inc., Chicago, Ill.
 [22] Filed: May 6, 1974
 [21] Appl. No.: 466,872

[52] U.S. Cl. 211/17; 211/117
 [51] Int. Cl.² A47F 5/08
 [58] Field of Search 211/17-22,
 211/117; 254/188, 189; 294/81 R

[56] References Cited

UNITED STATES PATENTS			
595,967	12/1897	Parsons.....	211/18
624,231	5/1899	Martin.....	211/17
653,386	7/1900	Hunter.....	211/19
813,032	2/1906	Baker.....	254/188
909,970	1/1909	Van Wie.....	254/188
2,603,523	7/1952	Cameron.....	294/81 R X

FOREIGN PATENTS OR APPLICATIONS

258,496	11/1948	Switzerland.....	211/17
24,321	9/1897	United Kingdom.....	211/18
981,139	5/1951	France.....	211/117
4,022	1/1898	United Kingdom.....	211/18
17,384	7/1898	Switzerland.....	211/18

Primary Examiner—Roy D. Frazier
 Assistant Examiner—Peter A. Aschenbrenner
 Attorney, Agent, or Firm—Dominik, Knechtel, Godula & Demeur

[57] ABSTRACT

A hoistable storage rack for bicycles and hoistable from an overlying support, the rack including a support bar, a pair of opposed curvilinear hanging means extending upwardly from opposed ends of the support bar, and supporting first pulley means mounted thereon and extending upwardly therefrom, the overlying support having hanging means mounted thereon in vertical alignment with the curvilinear hanging means on the support bar, and the hanging means supporting a second pair of pulley means mounted thereon and extending downwardly therefrom, and rope means interconnecting the opposed pairs of opposed first and second pulley means, the rope means terminating in a central section, thereby permitting the application of retractional force which, in turn, causes the first and second pairs of pulley means to work against each other and cause the hoisting of the support bar, which further includes opposed pairs of bicycle hooks extending outwardly therefrom, to support a bicycle mounted thereon, such that a bike mounted on the bicycle hook may be hoisted up into storage posture by the application of retractional force against the central section of the rope means.

12 Claims, 5 Drawing Figures

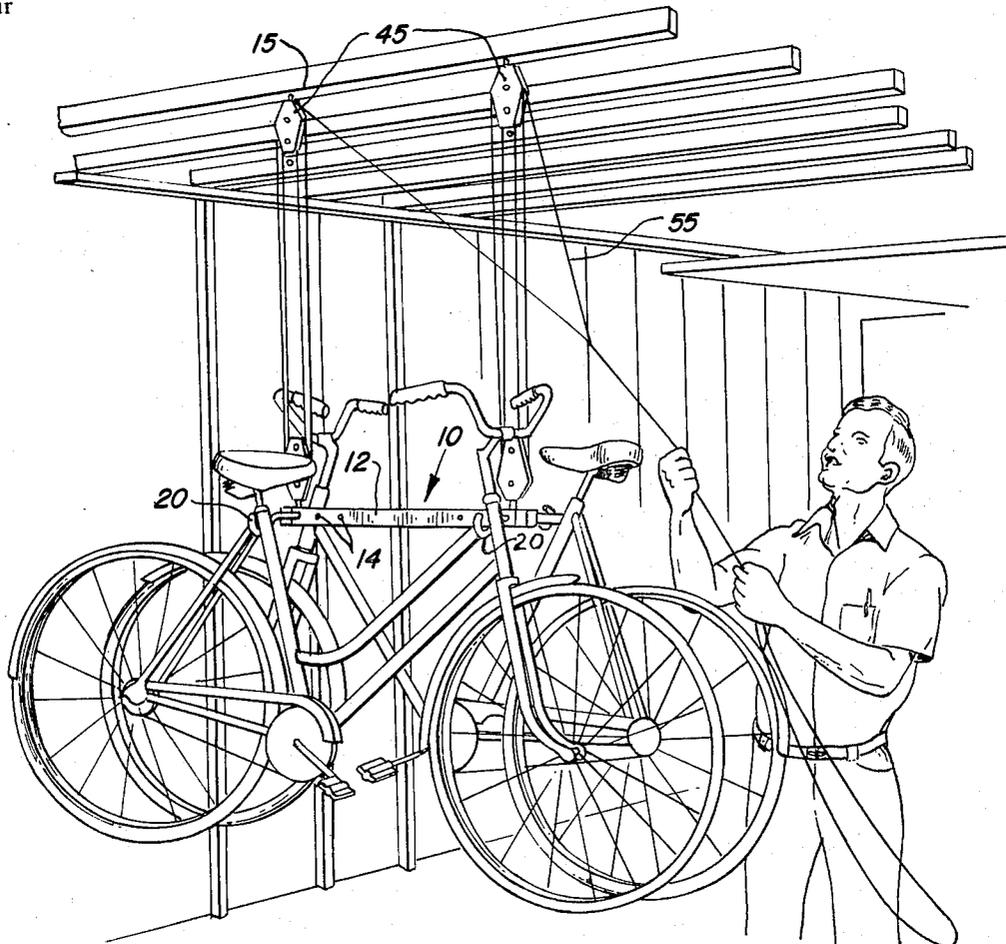


FIG. 1

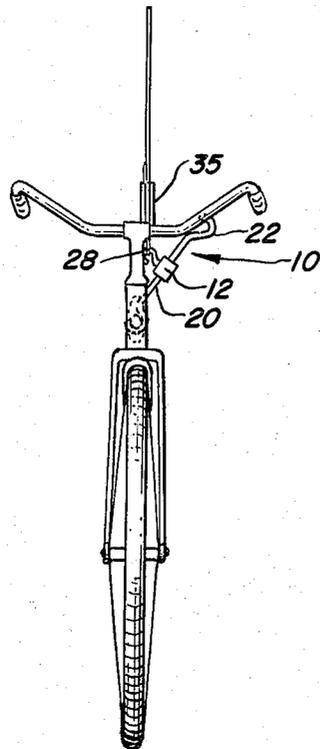
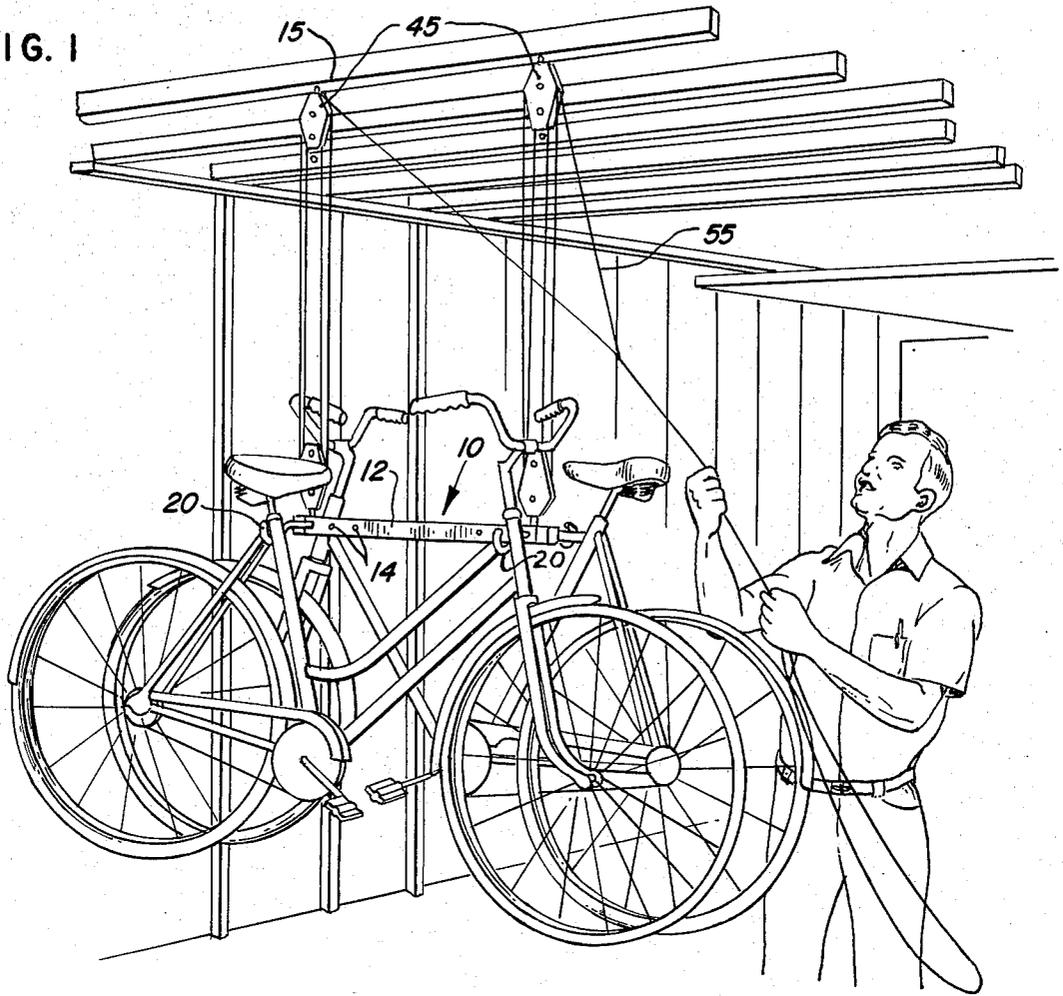


FIG. 2

BIKE RACK HOIST**BACKGROUND OF THE INVENTION**

The sport of bicycling has experienced a renewed interest by the public causing a tremendous market in bicycles. Generally, it has been found that any given family will purchase as many as four bicycles to accommodate the members of the family and to enjoy the sport of bicycling.

It is obvious that a wide variety of storage racks have been designed for mounting on an automobile, or other vehicle permitting the transportation of bicycles by car, bus or the like. However, the storage problem associated with bicycles when not in use has now become a problem, especially due to the acquisition of the numbers of bikes by any single family. The customary manner of storing bicycles has traditionally been to simply position the bicycles within an enclosure, such as a garage, storage house or the like, employing the kick stand, or otherwise leaning the bicycle against a supporting wall. As has been mentioned above, with the increase in the number of bicycles per family, storage of the bicycles has become a problem. Clearly, it is desirable to relieve the garage space, or storage space in an enclosed storage house for the normal utility to which such structures are intended. It would further be preferable to provide storage means for bicycles whereby a plurality of bicycles may be stored or positioned within the available storage space, but without consuming needed floor space. For example, it would be desirable to provide storage racks for bicycles within a garage, but without, at the same time, utilizing floor space otherwise needed for the storage of automobiles.

In order to alleviate the storage problems associated with bicycles, the present invention provides a convenient hoistable storage rack, which permits the storage of a plurality of bicycles, along a single support bar which may be hoisted up out of contact with the ground surface, and into a storage posture above eye level.

OBJECTS AND ADVANTAGES

It is therefore the principal object of the invention to provide a storage rack for bicycles which is hoistable and by which the storage of the bicycles does not consume the floor space of the surrounding structure.

A further object of this invention is to provide a storage rack for bicycles which permits the storage of a plurality of bicycles on a single rack and at the same time permits the hoisting of the rack out of position and out of contact with the underlying storage floor space.

Still another object of the invention is to provide a storage rack for bicycles which is formed by a support bar having both front and rear surfaces, each of the front and rear surfaces provided with a pair of horizontally spaced bicycle hooks mounted thereon to accommodate the mounting of a bicycle thereon, a pair of curvilinear hanging means mounted on the support bar, one of the pair of hanging means mounted adjacent each of the opposed ends of the support bar, each of the opposed curvilinear hanging means carrying first pulley means mounted thereon and extending upwardly therefrom, while the overlying support is provided with opposed support hanging means fixedly secured thereto and supporting a pair of second pulley means mounted thereon and extending downwardly therefrom, the second pair of pulley means being in vertical alignment with the first pair of pulley means, the first

pair of pulley means being rotationally mounted with respect to the curvilinear hanging means and rope means for interconnecting the opposed ones of the pair of vertically opposed first and second pulley means such that retractional force applied against the rope means will cause the first and second pulley means to work against one another, thereby resulting in the hoisting of the storage rack into an elevated storage position with one or more bicycles supported thereon.

In connection with the foregoing object, it is another object of this invention to provide a bicycle storage rack which is hoistable, of the type described, wherein the curvilinear hanging means comprises eye bolts mounted on the support bar thereby permitting the first pulley means mounted thereon to be rotationally movable with respect to the eye bolt.

Still another object in connection with the foregoing objects, is to provide a hoistable storage rack of the type described, wherein the first and second pulley means each consists of fiddle blocks, having both a large and a small pulley wheel oriented in vertical alignment, the first pulley means having the lower pulley wheel positioned above the larger pulley wheel, while the second pulley means is constructed to have the smaller pulley wheel positioned below the larger pulley wheel, whereby rope means interconnecting the respective larger and smaller pulley wheels of the respectively opposed ones of the pair of pulley means permits the pulley means to work against each other when retractional forces are applied against the rope means in order to cause the support bar carried by the first pulley means to be hoistable into a storage posture.

A further object of the invention is to provide a hoistable storage rack of the type described, wherein the support bar is provided with a plurality of apertures horizontally aligned along the opposed ends thereof, such that the bicycle hooks mounted thereon may be horizontally adjustable along the length of the support bar thereby to accommodate the mounting and storage of different sized bicycles.

Still another object of the invention is to provide a storage rack of the type described, wherein the storage bar is rotationally movable with respect to the hoisting axis, thereby to accommodate the load of one bicycle mounted on one side of the storage rack, causing the storage bars to be canted due to the load of the single bicycle, which in turn, permits the bicycle to assume a vertical orientation when stored in a hoisted position.

Further features of the invention pertain to the particular arrangement and parts, whereby the above-outlined and additional operating features thereof are attained.

The invention, both as to its organization and method of operation, together with further objects and advantages thereof, will best be understood by reference to the following specification, taken in conjunction with the accompanying drawings, in which:

FIG. 1 is a plan view showing the storage rack of the subject invention in its hoisted storage posture with respect to an overlying support;

FIG. 2 is an end elevational view showing the subject storage rack having a single bike mounted thereon and the canted position assumed by the storage rack, when loaded with a single bicycle;

FIG. 3 is an exploded perspective view showing the interrelationship between the respective elements of the support rack;

FIG. 4 is a side elevational view showing the relationship between the support rack and the overlying support and the means for the interconnection of the respective pulley mounts of the storage rack, and the overlying support; and

FIG. 5 is a plan view showing the manner of adjusting the vertical end height desired for the storage rack.

DETAILED DESCRIPTION OF DRAWINGS

With reference to FIGS. 1, 3 and 4 of the drawings, the details of construction of the storage rack of the present invention are illustrated. The storage rack, generally referred to by the numeral 10, is formed by a support bar 12, which is shown to have a length slightly less than the overall length of a typical bicycle frame. In the embodiment illustrated in the drawings, the support bar 12 is shown to include a series of three mounting apertures 14, adjacent each of the opposed ends of the support bar 12, the apertures 14 extending through the support bar 12.

The support bar 12 includes a front surface 16, and rear surface 18, the front surface carrying a pair of opposed bicycle hooks 20. Similarly, the rear surface 18 of the support bar 12, carries a pair of rear bicycle hooks 22, the front and rear bicycle hooks 20 and 22 respectively, being in horizontal alignment with respect to each other. As illustrated in the present embodiment of the invention, each of the front and rear bicycle hooks 20 and 22 respectively, include a rear shank portion 23, which is threaded, such that the respective hooks 20 and 22 may be mounted to the support bar 12, by insertion through one of the apertures 14, provided in the support bar 12. The bicycle hooks 20 and 22 respectively are held in fixed mounted relationship with respect to the support bar 12 by means of a pair of threaded nuts 24 and 25, the first threaded nut 24 being screw-threadedly mounted to the shank portion of the hook 20 and 22, prior to insertion in the aperture, while the rear threaded nut 25 is applied once the shank portion 23 has been inserted through the aperture 14.

The construction of each of the hooks 20 and 22 provides another desirable feature of the invention. It will be observed that each hook 20 and 22 includes a tail section 26 such that the hooks 20 and 22 have an overall dimension beyond a semi-circle or 180° arc. This feature insures that a bicycle loaded on a pair of hooks 20 or 22, will not accidentally fall from the hooks 20 or 22 in the event the rack should cant as illustrated in FIG. 2 of the drawings.

It will be observed further from a view of FIG. 3 of the drawings, that each one of the pair of front and rear bicycle hooks 20 and 22 respectively are positioned on the support bar in horizontally offset position with respect to one another. This is accomplished by positioning the front hook 20 through one aperture 14, while the rear bicycle hook 22 is inserted through the next adjacent aperture 14. It will be obvious that if desired, the bicycle hooks 20 and 22 may be mounted to the support bar 12 by any other suitable means, such as by welding or the like, and further, the respective ones of the pair of front and rear bicycle hooks 20 and 22 may be positioned in absolute horizontal alignment. The construction illustrated in the present embodiment is deemed to be the most economical from a manufacturing point of view, and therefore, is illustrated herein only for purposes of explanation.

Each of the opposed ends of the support bar 12 are further provided with an eye bolt 28 which is mounted

on the support bar 12 through a corresponding aperture 29 provided therein and held in position by means of a threaded nut 30. Each of the eye bolts 28 extends vertically upwardly from the support bar 12, each supporting a fiddle block 35 thereon. The fiddle block 35 is formed by a pair of opposed support plates 36, holding a pair of pulley wheels captive therebetween. The lower fiddle blocks 35 are shown to include a lower large pulley wheel 37 and an upper smaller pulley wheel 38. As is known, the pulley wheels 37 and 38 are rotationally arrested between the support plates 36 such that both of the pulley wheels 37 and 38 are completely free to rotate. The lower end of the fiddle block 35, carries a lower mounting ring 39 while the upper end carries an upper mounting ring 41. As shown in FIGS. 3 and 4 of the drawings, the lower mounting ring 39 interconnects with the eye bolts 28 thereby to achieve a firm but rotationally movable interconnection. The provision of a firm but rotationally movable interconnection between the fiddle block 35 and the eye bolt 28 is deemed important for purposes of the present invention in order to permit the canting movement of the storage rack 10 when loaded with a single bicycle, as illustrated in FIG. 2 of the drawings.

As shown in FIGS. 1 and 4 of the drawings, the invention contemplates the use of an overlying support 15, which carries a pair of opposed hanging eye bolts 43. As illustrated in FIG. 4 if the overlying support 15 is formed by a wood brace or bar, of the type commonly found in a garage, the hanging eye bolt 43 may be in the form of threaded eye bolts which may be screw threadedly driven into the wooden overlying support 15. It is apparent, however, that any form of securely mounted hanging means, or hanging eye bolts 43 may be provided so long as the same are securely mounted on the overlying support 15.

The hanging eye bolts 43 provide a support for carrying a pair of opposed upper fiddle blocks 45, which are constructed in the same manner as the lower fiddle blocks 35. It will be seen that the upper fiddle blocks 45 include a pair of opposed support plates 46, rotationally arresting an upper larger pulley wheel 47 and a lower smaller pulley wheel 48, therebetween. Each of the upper fiddle blocks 45 also include a lower mounting ring 49 and an upper mounting ring 51.

As shown in FIGS. 1 and 4 of the drawings, the upper fiddle blocks 45 are rotationally or pivotally mounted on the corresponding hanging eye bolt 43 by means of the upper mounting rings 51, such that both of the upper fiddle blocks 45 rotate about the vertical axis thereof. As previously explained, the lower fiddle blocks 35 are carried on the lower eye bolts 28 in a rotational or pivotal relationship, such that both the upper fiddle blocks 45 and the lower fiddle blocks 35 are similarly mounted on the corresponding eye bolts 43 and 28 respectively. In operation, it has been experienced that as much as a 45° angle of rotational movement may be achieved by both the upper fiddle blocks 45 and lower fiddle blocks 35 with respect to the corresponding eye bolts 43 and 28 respectively. The importance of this feature is the fact that since both of the upper and lower fiddle blocks, 45 and 35 respectively are rotationally movable, the effort required to hoist the subject storage rack 10 is greatly minimized, thereby requiring less work energy incident to the hoisting operation.

Another feature of the invention which is considered to be important with respect to the hoisting operation

relates to the vertical alignment of the respective upper and lower fiddle blocks 45 and 35 respectively. It is deemed desirable to position the upper fiddle blocks 45 in direct vertical alignment with respect to the lower fiddle blocks 35, whereby the retention of the vertical axis as between the respective fiddle blocks 45 and 35 facilitates and minimizes the work energy required to hoist the rack 10.

The upper and lower fiddle blocks 45 and 35 respectively are interconnected by means of a rope 55, the threading of the rope through the respective fiddle blocks 35 and 45 illustrated in FIG. 4 of the drawings. It is noted that one end portion 56 of the rope 55 is securely tied or otherwise affixed to the lower mounting ring 49 of the upper fiddle block 45 and is then wound around the upper smaller pulley wheel of the lower fiddle block 35. The rope 55 is then threaded upwardly around the smaller pulley wheel 38 of the upper fiddle block 45 and is then carried around the lower larger pulley wheel 37, of the lower fiddle block 35. The rope 55 is then carried up and about the upper larger pulley wheel 47 of the upper fiddle block 45. The rope 55 is then threaded through the larger pulley wheel 47 of the opposed upper fiddle block 45, and then downwardly around the lower larger pulley wheel 37 of the lower fiddle block 35. The rope 55 is then threaded upwardly around the smaller pulley wheel 48 of the upper fiddle block 45 and thence downwardly around the upper smaller pulley 38 of the lower fiddle block 35. The opposed end of the rope 57 is then tied to the lower mounting ring 49 of the upper fiddle block 45 in the manner shown in FIG. 4 of the drawings. It will further be noted that the central portion 58 of the rope 55 is permitted a great deal of slack and is provided with a knotted section 60. Hence, in order to adjust the vertical positioning of the support bar 12, with respect to the ground surface as well as the overlying support 15, the operator merely applies retractional force to the rope 55 until the support bar 12 is moved and hoisted upwardly to the desired height. At that point, the operator applies the knotted section 60 to the rope 55, thereby preventing the support bar 12 from falling any lower than permitted by the lateral extension of the rope from the knotted section 60.

The mode of operation of the subject storage rack 10 is now clearly indicated. As shown in FIG. 1 of the drawings, a pair of bicycles may be mounted on the respective front and rear bicycle hooks 20 and 22 in the manner illustrated and the storage rack 10 hoisted upwardly to remove the bicycles from the floor space below. The hoisting is accomplished by the operator applying retractional force against the rope 55 which in turn, causes the upper and lower fiddle blocks 45 and 35 respectively to work against one another through the rope 55 which, as previously explained, interconnects the upper and lower fiddle blocks 45 and 35, respectively, through the pulley wheels 37, 38 and 47 and 48 respectively. It is therefore apparent that once the bicycles have been mounted on the support bar 12 and the rack hoisted into the storage position, the bicycles will be stored out of contact with the available floor space, thereby permitting the full utilization of warehouse or storage space therebelow.

From the above description, a further object and advantage obtained by this invention is now apparent. By the provision of a fiddle block construction for the pulley means, the work energy required to hoist the subject rack 10 is also facilitated. For example, if side by

side blocks were to be utilized instead of the fiddle block construction for the pulley means, it is apparent that when threading rope through side by side blocks, the rope must be crossed over at least one point and this crossing over would have the tendency to increase the friction incident to the hoisting operation. Hence, the overall work energy required to hoist the rack 10 especially when loaded with one or more bikes is increased. However, the provision of the fiddle block construction for the pulley means permits the rope 55 to be retained in absolute vertical orientation without any crossing over and hence, the friction incident to the hoisting operation is minimized to the absolute thereby decreasing the work energy required to hoist the rack 10. It has been found that the subject rack 10 of the present invention operates with a four to one ratio of mechanical advantage such that little effort is required to hoist the rack 10 when loaded with even two bikes. For example, it has been found that when the rack 10 is loaded with 90 lbs. of bicycles, a work energy of 25 lbs. or less is all that is required in order to hoist the rack 10 into the storage position. This mechanical ratio is obtained by virtue of the employment of fiddle blocks rather than side by side blocks, as the pulley means, as well as by providing the fiddle blocks in pivotal or rotational mounting with respect to the corresponding eye bolts 43 and 28 respectively. As indicated previously, when retractional force is applied against the rope 55 in order to hoist the rack 10, in view of the fact that both of the pairs of fiddle blocks 35 and 45 respectively are rotationally or pivotally mounted, the fiddle blocks 35 and 45 rotate with respect to the corresponding eye bolts 28 and 43 such that the pairs of fiddle blocks, 35 and 45 are kept in vertical alignment even during the hoisting operation. This movement facilitates the hoisting operation by minimizing friction and retaining the overall orientation of the rope 55. Also, as previously mentioned, the provision of fiddle blocks as opposed to side by side blocks minimizes friction, thereby decreasing work energy required to hoist the subject rack 10, even when fully loaded.

Another advantage obtained by the present invention again resides in the provision of rotationally or pivotally movable mounting of the lower fiddle blocks 35 with respect to the corresponding eye bolts 28. Due to the construction as provided herein, it is clear that the lower fiddle blocks 35 rotationally move with respect to the eye bolt 28 and as a result, in the event that a single bike is to be stored on the subject rack 10, the support bar 12 is permitted a canting rotational movement as illustrated in FIG. 2 of the drawings. Hence, once the rack 10 is hoisted into the storage posture with a single bicycle mounted thereon, the bicycle will assume a vertical storage position even though there is an offset load on the rack 10. This positioning of the bicycle with respect to the rack 10 is deemed to be a desirable storage posture in that the operator is assured that virtually most parts of the bicycle are removed from interference with the lower surrounding area.

Another advantageous feature of the invention pertains to the construction of the front and rear bicycle hooks 20 and 22 respectively. As previously indicated, the hooks 20 and 22 are each provided with an outer tail section 26, which extends the hook portion of the hooks 20 and 22 beyond a semi-circle configuration. As a result, in the event that only one bicycle is loaded on the hooks 20 or 22, and the canting movement is obtained as illustrated in FIG. 2 of the drawings, and as

described above, the operator is assured that the bicycle can not accidentally fall from the hooks which would cause possible injury to the operator, as well as damage to the bicycle. Hence, the configuration of the hooks 20 and 22, in that each is provided with a tail section 26 produces another desirable result and function within the scope of the present invention.

A further feature of the invention pertains to the respective front and rear bicycle hooks 20 and 22 which in the preferred embodiment are coated with a plasticized material. For example, the most efficient means of providing plastic coated bicycle hooks, 20 and 22, is to dip the hooks, when formed into a vinyl plastic material and then permitting the vinyl to dry out on the hook members. Hence, the provision of a vinyl coating over the surface of the hooks 20 and 22 thereby minimizes and actually prevents any scratching damage to the bicycles when mounted on the rack 10.

In view of the fact that the present invention employs pulley wheels 37, 38, 47 and 48, and since the rope 55 is bound to assume a significant amount of use, it is deemed desirable to provide a tough nylon rope which is capable of long usage without wear.

It is further contemplated to be within the scope of the present invention to provide a storage bar 12, which may include more than a pair of front and rear bicycle hooks, 20 and 22 respectively. For example, a support bar 12 could be provided having two pair of front bicycle hooks, 20 and two pair of rear bicycle hooks 22, such that a total of four bikes could be stored on the subject rack 10. Similarly, any number of hooks could be provided for the storage mounting of bicycles thereon, the only adaptations necessary would be to provide a longer support bar and a greater number of upper and lower fiddle blocks, to securely support the storage rack 10 when in the hoisted position.

It is apparent from the above description and drawings, that the present invention provides a simple but highly efficient storage rack for bicycles. The storage rack of the present invention permits the storage of bicycles within presently existing structures, while at the same time freeing presently available garage or warehouse space, since the bicycles are not stored on the underlying ground level. The storage rack of the present invention is easily hoistable such that one or more bikes may be easily stored on the storage rack and hoisted out of position, alleviating and freeing additional storage space therebelow.

It is therefore appreciated that all of the above objects and advantages have been accomplished by means of the storage rack depicted herein and the various embodiments thereof to provide an extremely compact and efficient storage rack for bicycles.

While there has been described what at present is considered to be the preferred embodiment of the invention, it will be understood that various modifications may be made therein and it is intended to cover in the appended claims, all such modifications as fall within the true spirit and scope of the invention.

What is claimed is:

1. A hoistable storage rack for carrying at least one bicycle thereon and permitting the hoisting of the rack on an overlying support, with at least one bicycle mounted thereon, comprising in combination,

a horizontally disposed support bar having front and rear surfaces,

a plurality of bicycle hooks mounted on the front surface of said support bar and extending forwardly outwardly therefrom,

a plurality of bicycle hooks mounted on the rear support surface of said support bar and extending rearwardly outwardly therefrom,

said support bar including a plurality of horizontally spaced and linearly aligned apertures disposed therethrough and adjacent each of the ends thereof, and each of said bicycle hooks including a threaded shaft, whereby each of said bicycle hooks may be mounted on said support bar by inserting said threaded shaft through one of said apertures and securely held in position by threaded nuts screwed threadably mounted thereon,

at least a pair of curvilinear hanging means, mounted on said support bar, one of said pair of hanging means mounted adjacent each end thereof and extending upwardly therefrom,

each of said hanging means having lower pulley means mounted thereon and extending upwardly therefrom,

the overlying support provided with opposed support hanging means fixedly secured thereto and extending downwardly therefrom,

each of said opposed hanging means having upper pulley means mounted thereon and extending downwardly therefrom,

said upper pulley means being positioned in spaced vertical alignment with respect to said lower pulley means,

said lower pulley means comprising a pair of fiddle blocks, each having a large pulley wheel and a smaller pulley wheel, said smaller pulley wheel being positioned above said larger pulley wheel, and said upper pulley means comprising a pair of second fiddle blocks, each having a larger pulley wheel and a smaller pulley wheel, said smaller pulley wheel being positioned below said larger pulley wheel,

rope means fixedly secured to each of said upper pulley means at the opposed ends of said rope means and having one end portion of said rope means interconnecting vertically opposed one of the said pairs of lower and upper pulley means, and the opposed end portion of said rope means interconnecting the other vertically opposed ones of said pairs of lower and upper pulley means,

and the central portion of said rope means positioned between said vertically opposed ones of said pairs of said lower and upper pulley means,

whereby retraction force applied against the central portion of said rope means will cause said vertically opposed ones of said pairs of lower and upper pulley means to work against each other, through said rope means, thereby to hoist said support bar upwardly with at least one bicycle mounted on and between respective bicycle hooks.

2. The hoistable storage rack as set forth in claim 1 above, wherein each of said opposed ones of said front and rear bicycle hooks are horizontally offset with respect to each other.

3. The hoistable storage rack as set forth in claim 1 above, wherein said upper pair of fiddle blocks is positioned above and in vertical alignment with respect to said lower pair of said fiddle blocks.

4. The hoistable storage rack as set forth in claim 3 above, wherein said rope means has one end secured to

the lower end of one of said upper fiddle blocks and extends downwardly about said smaller pulley wheel of said lower fiddle block, then upwardly about said smaller pulley wheel of said upper fiddle block, then downwardly about said larger pulley wheel of said lower fiddle block, the upwardly about said large pulley wheel of said upper fiddle block, and then continued about said large pulley wheel of said upper fiddle block, and downwardly about said large pulley wheel of said lower fiddle block, then upwardly about said smaller pulley wheel of said upper fiddle block, then downwardly about said smaller pulley wheel of said lower fiddle block then upwardly and securely affixed to the lower end of said upper fiddle block, the central portion of said rope providing a grasping point for the operator to grasp and apply retractional force to hoist said rack.

5. The hoistable storage rack as set forth in claim 1 above, wherein said curvilinear hanging means comprises a pair of eyes bolts mounted on the top surface of said support bar adjacent the opposed ends thereof, thereby to provide a curvilinear hanging support for said lower pulley means mounted thereon and extending upwardly therefrom.

6. The hoistable storage rack as set forth in claim 5 above, wherein said support bar is rotationally mounted with respect to said lower pulley means thereby to permit the canting movement of said support bar when one bicycle is mounted on and between the respective pair of bicycle hooks creating an off-center load.

7. The hoistable storage rack as set forth in claim 6 above, wherein each of said lower and upper pulley means is rotationally mounted with respect to the corresponding hanging means whereby each of said pulley means is rotationally movable with respect to the vertical axis established between opposed pairs of said upper and lower pulley means.

8. The hoistable storage rack as set forth in claim 1 above, wherein said front and rear pairs of bicycle hooks are horizontally offset with respect to each other.

9. The hoistable storage rack as set forth in claim 1 above, wherein each of said bicycle hooks is covered with a plasticized material thereby to minimize frictional contact with a bicycle mounted thereon.

10. A hoistable storage rack for carrying at least one bicycle thereon and permitting the hoisting of the rack onto an overlying support with at least one bicycle mounted thereon, comprising in combination,

- a horizontally disposed support bar having front and rear surfaces,
- said support bar having a plurality of horizontally spaced and linearly aligned apertures disposed therethrough adjacent each of the opposed ends of said support bar,
- a pair of opposed bicycle hooks mounted on the front surface of said support bar through corresponding

apertures at each of the opposed ends of said support bar, and said opposed bicycle hooks extending forwardly outwardly therefrom,

a pair of opposed bicycle hooks mounted on the rear surface of said support bar through corresponding apertures in said support bar, and extending rearwardly outwardly therefrom,

said front and rear pairs of bicycle hooks being horizontally offset with respect to each other, by virtue of the mounting thereof in different ones of said apertures positioned in said support bar,

each of said front and rear pairs of bicycle hooks including a threaded shaft, whereby each of said bicycle hooks may be mounted on said support bar by inserting said threaded shaft through one of said apertures and securely held in position by threaded nuts screw threadily mounted thereon,

a pair of eye bolts mounted on said support bar, one of said pair of eye bolts mounted adjacent each of the opposed ends of said support bar and extending upwardly therefrom,

each of said eye bolts having a lower fiddle block rotationally mounted thereon and extending upwardly therefrom,

the overlying support provided with opposed hanging means fixedly secured thereto and extending downwardly therefrom,

each of said opposed hanging means having an upper fiddle block rotationally mounted thereon and extending downwardly therefrom,

said upper fiddle blocks being positioned in spaced and vertical alignment with respect to said lower fiddle blocks

rope means fixedly secured to each of said lower fiddle blocks at the opposed ends of said rope means and having one end portion thereof interconnecting vertically opposed ones of said pairs of said lower and upper fiddle blocks, and the opposed end portion of said rope means interconnecting the other vertically opposed ones of said pairs of lower and upper fiddle blocks,

and the central portion of said rope means positioned between said vertically opposed ones of said pairs of lower and upper fiddle blocks,

whereby retraction force applied against the central portion of said rope means will cause said vertically opposed one of said pairs of lower and upper fiddle blocks to work against each other through said rope means, thereby to hoist said support bar upwardly with at least one bicycle mounted on and between a respective pair of bicycle hooks.

11. The hoistable rack as set forth in claim 10 above, wherein said hanging means fixedly secured to the overlying support comprise a pair of opposed eye bolts supporting said upper fiddle blocks thereon.

12. The hoistable rack as set forth in claim 10 above, wherein said rope means comprises a nylon rope.

* * * * *

60

65