March 2, 1965 J. D. JACOBS ETAL 3,171,542

BOOK RACK

Filed Feb. 25, 1963

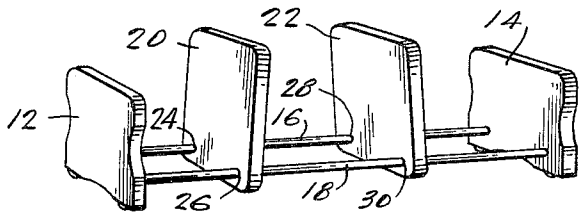


FIG-1-

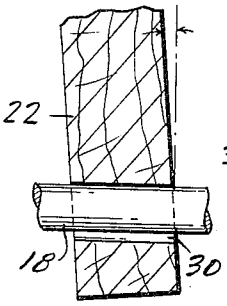


FIG-2-

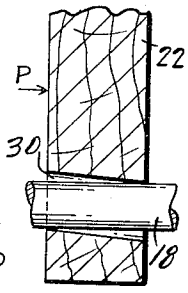


FIG-3-

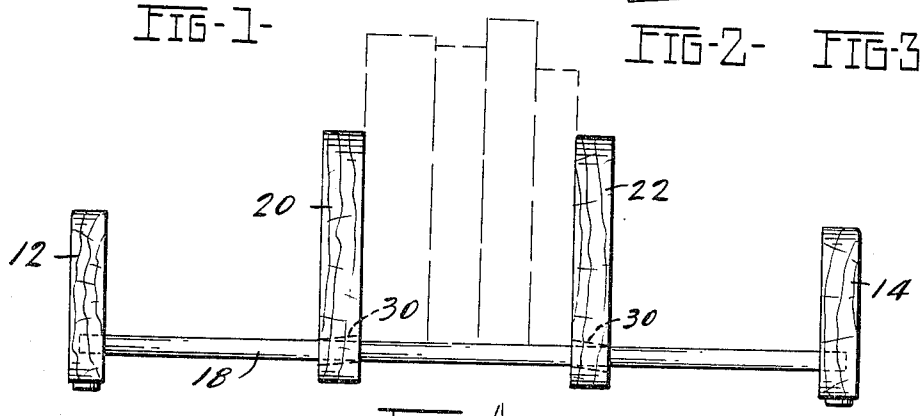


FIG-4-

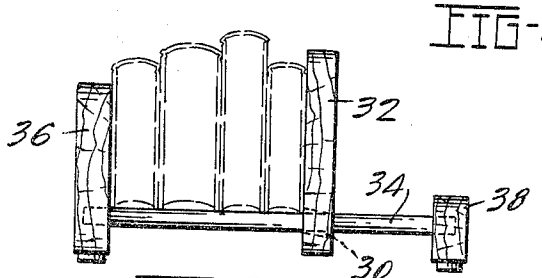


FIG-5-

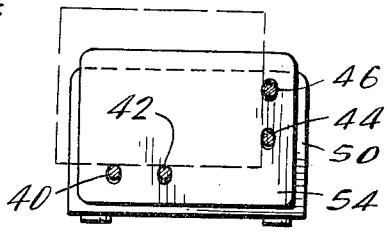


FIG-7-

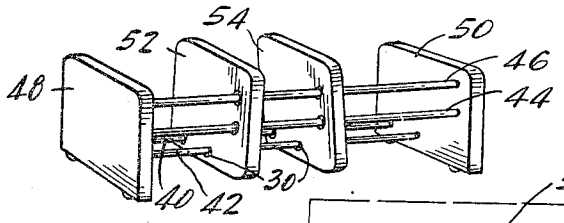


FIG-6-

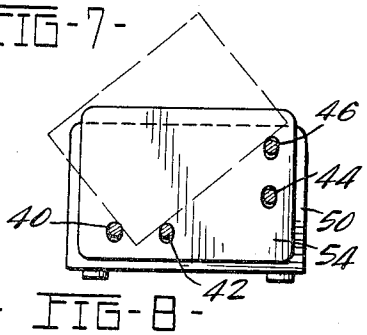


FIG-8-

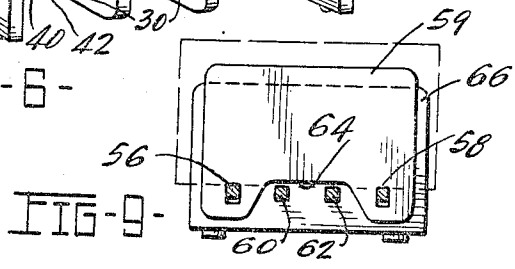


FIG-9-

INVENTORS:
JAMES D. JACOBS,
BY WILLIAM P. CARR.

ATT'Y.

United States Patent Office 3,171,542 Patented Mar. 2, 1965

3,171,542

BOOK RACK

James D. Jacobs, P.O. Box 184, Wauseon, Ohio, and William P. Carr, Perrysburg, Ohio; said Carr assignor to said Jacobs

Filed Feb. 25, 1963, Ser. No. 260,468
11 Claims. (Cl. 211—43)

This invention relates generally to a rack for holding books, phonograph records and similar objects and particularly to such a rack which is adjustable to receive various numbers of books and has means for holding the books in an upright position.

An objection to previous designs of book racks has been the frictional resistance to changing the spacing between movable book ends when it is desired to insert an additional book or to fit the book ends against a lesser number of books.

In prior designs of book racks in which the book ends were easily slidable, they then frequently were too loosely mounted to maintain in the books in an upright position.

Where locking devices have been utilized, they have frequently been difficult to manipulate, costly to fabricate, or unsightly.

Accordingly, a prime object of this invention is to provide a book rack with book ends easily spaced to receive different numbers of books but which still resist movement from their book holding position so that the books are firmly held in place.

A further object of the invention is the provision of a book rack of a simple, inexpensive but attractive design.

These and other objects and advantages are principally attained through having one or a pair of book ends oversizedly ported for easy sliding movement upon rods when the book end or ends are slightly tilted, and the book end or ends frictionally seize the rods when brought to an upright position by forced engagement with a book placed on the rack.

The invention will be described in more detail hereafter in connection with the accompanying drawings in which,

FIGURE 1 is a perspective view of a book rack embodying the invention;

FIGURE 2 is an enlarged partial view of a book end and rod of the rack of FIGURE 1 with the book end in tilted, easily slidable position relative to the rod;

FIGURE 3 is a view of the elements of FIGURE 2 with the book end in upright holding position due to the abutting pressure between a book and the left side of the book end;

FIGURE 4 is an enlarged side elevation of the book rack of FIGURE 1 showing how the book ends assume an upright position when brought against books placed in the rack;

FIGURE 5 is a side elevation of a book rack embodying a modified form of the invention in which there is a single slidable book end which acts in combination with a stationary standard to hold books;

FIGURE 6 is a perspective view of another modified form of the invention in which books may be supported in a tilted as well as a straight vertical position;

FIGURE 7 is an end view of the rack of FIGURE 6 showing how books in a vertical position may be placed on the rack;

FIGURE 8 is an end view similar to that of FIGURE 7 but indicating how books may be held in a tilted position; and

FIGURE 9 is an end view of a book rack embodying the invention in which there are four planarly positioned rods especially adapted for supporting extra large books.

Referring to the drawings in more detail, the book rack

of FIGURE 1 has end standards 12 and 14 into which the rods 16 and 18 are tightly fitted.

Slidable upon the rods are book ends 20 and 22. The holes 24, 26, 28, and 30 in the book ends through which the rods pass are appreciably larger in diameter than the rods, thus making the book ends easily movable along the rods for appropriate spacing to receive any number of books.

The rods may have a diameter of three-eighths of an inch and the holes one of seven-sixteenths. However, the holes through each book end are angled downwardly in the direction of the opposing book end so that the book ends lean slightly toward each other, when not in book holding position, as indicated in FIGURE 1.

With the rod and holes sizes as specified and the book ends about seven-eighths of an inch thick the holes would be angled about 5°. The relation of the book end 22 to the rod 18 when the book end is in slidable free relation therewith is illustrated in FIGURE 2.

The book rack of FIGURE 1 is shown in FIGURE 4 with the book ends 20 and 22 in an erect position which they take when engaging a number of books.

Due to the pressure applied to the book ends when they are brought against an intervening book or group of books they are forced to an upright position and the upper side wall of the outer end of each hole therethrough is thus brought against the upper side of the respective rod, and the underside wall of the other or book facing end of the hole is brought against the underside of the rod.

This forced engagement holds the book end through frictional resistance against lateral displacement. This relation of a hole through book end 22 in regard to rod 18 is illustrated in FIGURE 3.

The book rack of FIGURE 5 utilizes only a single movable book end 32 which is slidable along rods 34 to hold books against the stationary combination book end and standard 36. The other ends of the rods 34 are fixed in the small standard 38.

The embodiment of the invention shown in perspective in FIGURE 6 has two front rods 40 and 42 in a horizontal plane and two rear rods 44 and 46 in a vertical plane. The end standards 48 and 50 are similar to those previously illustrated as are the movable book ends 52 and 54. This arrangement may receive books in a straight vertical position as indicated in the end view of FIGURE 7, or in an inclined position as shown in FIGURE 8.

In respect to the book rack of FIGURES 6, 7 and 8, the holes for the front horizontal rods 40 and 42 may be angled and only sufficiently larger than the rods to frictionally engage them when the book ends are upright, while the holes for the rear vertically elevated rods 44 and 46 may be oversize to avoid any dragging contact with the rods. In fact whenever there are at least two rods in the lower plane, it is preferable that they alone should be associated with frictionally engaging holes. However, in this particular embodiment rod 44 is only slightly above rods 40 and 42 and the book ends would function satisfactorily if one of the rods 40 or 42 and the rod 44 were arranged for frictional engagement with the holes through the book ends.

Some fairly satisfactory frictional holding is obtained through a single angled hole through a movable book end with other hole or holes straight or enlarged for sliding contact only, although it is preferred to have angled frictionally engaging holes through which two rods extend.

In the rack embodiment of FIGURE 9 there are four rods in a horizontal plane to hold large books. These rods have a square shape instead of the cylindrical form of the rods previously illustrated. The two outer rods 56 and 58 extend through angled holes in the book end

59 for frictional holding in an upright position while the inner rods 60 and 62 are nonengaged by the book ends extending freely through an arched lower cut away portion 64 in the book ends, only one of said book ends 59 being shown in this cross sectional view with the associated end standard 66.

While round rods and cylindrical holes in the book ends are preferred from a fabricating standpoint, square, as shown in FIGURE 9 rectangular, polygonal, and other shapes of rods, and holes in the book ends function quite as satisfactorily and if including planar surfaces of sufficient area for holding a book end against edgewise turning may be used singly. In such an arrangement the rod should pass through a hole in the lower center of each book end.

A specific example has been given herein in respect to the size of rods, the diameter of the holes through the book ends, and the thickness of the book ends. These specifications are for one particular embodiment of the invention. The required angle of the holes varies according to the difference between the size of the rods and the diameter of the holes, the angle being proportionally larger with a greater difference in such dimensions.

Also, the angle suitable for establishing the frictional contact will vary inversely in magnitude with the thickness of the book end. For instance, if the book end is only seven-sixteenths of an inch in thickness instead of seven-eighths as described, with the same dimensions of holes and rods, the suitable angle would be about ten degrees instead of the specified five degrees from the horizontal. To avoid too noticeable a slant to the book ends in idle position, a thickness of the book ends of at least five-eighths of an inch is recommended.

From the standpoint of appearance as well as function, wood is the preferred material for the book ends and standards of the rack of this invention. Plastic and light metal materials may be utilized but many would be lacking in frictional gripping power.

We claim:

1. A rack for books having horizontally disposed, generally rigid, elongated guide means, standards fixed to the ends of the guide means and supporting the guide means in a position above the bases of the standards, and a movable book end of appreciable thickness with a straight hole through its lower portion, the axis of said hole being at a slight angle to the axis of the elongated guide means, the guide means normally extending loosely through the hole, whereby the book end normally rests upon the guide means slightly tilted from a vertical position and is thus easily moved along the guide means, and whereby the book end may be freely brought to a vertical position by forced abutment against a book and is stopped there by binding of the guide means with the walls of the hole.

2. A rack according to claim 1 in which the guide means comprises a rod-like member.

3. A rack according to claim 1 in which one of the standards acts as a stationary book end against which books are held by the movable book end.

4. A rack according to claim 1 in which there are two opposed movable book ends and the guide means comprise one of two parallel rods.

5. A rack for books and other flat objects which includes a pair of horizontally spaced, generally rigid, parallel rods for supporting the books, a pair of book ends, one of said book ends being movable upon the rods and having holes through which the rods extend, at least one of said holes being slightly angled through the book end and being dimensioned slightly larger than the rod, whereby when slightly tilted the book end is easily moved along the rod but may be easily brought to a vertical position by forced abutment against a book, the book end when in vertical position resisting further movement through the binding of the rod with the walls of the hole.

6. A rack for books having a pair of rigid, horizontal, elongated guides, standards fixed to the ends of the guides and supporting the guides in a position above the bases of the standards, and a movable book end of appreciable thickness with a straight hole through its lower portion, the axis of said hole being at a slight angle to the axis of one of the elongated guides, the latter normally extending loosely through the hole, whereby the book end normally rests upon said guide slightly tilted from a vertical position and is thus easily moved along said guide, and whereby the book end is easily brought to a vertical position by forced abutment against a book and is held in place there by binding of said guide with the walls of the hole.

7. A rack for books having rigid, elongated guide rods, standards fixed to the ends of the guide rods and supporting them in a position above the bases of the standards, and a movable book end of appreciable thickness with holes through which the guide rods extend, the axis of a least one of said holes being at a slight angle to the axis of the guide rod extending therethrough, said rod normally extending loosely through the hole, whereby the book end normally rests upon said guide rod slightly tilted from a vertical position and is thus easily moved along said guide rod and is freely rockable to a vertical position, and whereby the book end, when brought to a vertical position by forced abutment against a book is held frictionally against movement along said guide rod by binding of said guide rod with the walls of the hole.

8. A rack according to claim 7 in which the guide rods are cylindrical.

9. A rack according to claim 7 in which there are two opposed movable book ends and the guide rods are parallel and lie in a common horizontal plane.

10. A rack according to claim 7 in which there are three guide rods, two of which are in the same horizontal plane, and the third is horizontally and vertically spaced from said two rods.

11. A rack for books and other flat objects which includes a pair of parallel rods for supporting the books, a pair of book ends, one of said book ends being at least three-eighths of an inch in thickness, and movable upon the rods and having holes through which the rods extend, at least one of said holes being slightly angled through the book end in respect to the axis of the rod extending therethrough, and being dimensioned slightly larger than said rod, whereby when slightly tilted the book end is easily moved along said rod and is easily and freely rockable from a tilted to a vertical position, but when brought to a vertical position by forced abutment against a book resists further movement through the binding of said rod with the walls of the hole without flexing said rod.

References Cited by the Examiner

UNITED STATES PATENTS

580,632	4/97	Yeiser	129—16
1,049,726	1/13	Johnson	211—43
1,363,138	12/20	Markham	211—43
2,510,077	6/50	Coffman	144—303
2,726,318	12/55	Marschke	240—4

FOREIGN PATENTS

623,007	12/61	Canada.
261,537	11/26	Great Britain.

CLAUDE A. LEROY, *Primary Examiner.*

FRANK L. ABBOTT, *Examiner.*