FOLDABLE RECORD HOLDING DEVICE
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This invention relates to merchandise racks, and, more particularly, to a foldable rack adapted to retain phonograph records or other thin flat articles.

The invention has particular utility as a storage device for phonograph records and will be described in connection with such use, but it will be understood that it has other uses and I do not intend to be limited to the particular use described.

It is conventional in the art to provide a storage rack for phonograph records in which the records are stacked on edge and face to face so that by opening the stack at a desired location one or more records readily may be inserted into or removed from the stack. Such racks are normally bulky in external configuration and require large and expensive boxes for shipment or storage.

A primary object of my invention is to provide such a rack which is foldable for shipment or storage to an external configuration occupying only a small portion of the volume occupied by such rack when expanded for normal use. This permits shipment or storage in a relatively small container.

A further object is to provide such a rack in which phonograph records can be stacked on edge without the hazard of the records inadvertently falling out of the rack. I accomplish this by providing substantially parallel horizontal side framing members which confine the records in the rack against lateral displacement therefrom and which converge together at an open end of the rack to prevent the records from falling or being displaced therefrom longitudinally of the rack.

Another object of the invention is to provide such a rack which is economical to manufacture and simple to expand or collapse.

Still another object of the invention is to provide such a rack which may be readily disassembled to permit packing in a small volume for economical shipment, and which can readily be assembled for use.

Other objects and advantages will appear from the following specification and the drawings, which are for the purposes of illustration only, and in which:

Fig. 1 is a perspective view of my invention assembled for use;
Fig. 2 is a side elevational view of the rack of Fig. 1;
Fig. 3 is a top plan view of the rack collapsed for shipment or storage;
Fig. 4 is a front elevational view of the rack shown collapsed in Fig. 3;
Fig. 5 is an enlarged sectional view taken on the line 5—5 of Fig. 2;
Fig. 6 is a perspective view of an alternative form of the invention;
Fig. 7 is an enlarged fragmentary section taken on the line 7—7 of Fig. 6;
Fig. 8 is an enlarged fragmentary section taken on the line 8—8 of Fig. 6;
Fig. 9 is an enlarged fragmentary section taken on the line 9—9 of Fig. 6;
Fig. 10 is a front elevational expanded view of the rack shown in Fig. 6; and
Fig. 11 is a plan view of a preferred form of clip.

Referring to the drawings, Fig. 1 shows a rack 10 having a pair of supporting members 11 and 12 which are substantially parallel and in the same substantially horizontal plane. Each of the supporting members 11 and 12 has a major straight portion 13 and a relatively short downturned portion 14 which forms a first foot member for the rack and the other end of the straight portion 13 forms a second foot member 15 for the rack. Slipped onto each of the supporting members 11 and 12 are pad elements 16 formed of rubber or other suitable material adapted to support the rack on a desired surface without scratching the surface and to provide against slippage of the rack relative to the surface.

A substantially U-shaped back member 18 includes upright portions 19 and 20 connected by a substantially horizontal portion 21, the lower ends of the upright portions 19 and 20 being pivotally secured by rivets 22 to the supporting members 11 and 12 adjacent their rearward ends and adjacent to the second foot members 15 thereof. As best shown in Fig. 3, the horizontal portion 21 of the back member 18 is substantially longer than the separation of the supporting members 11 and 12. As best shown in Figs. 2 and 5, each of the upright portions 19 and 20 of the back member 18 is provided with a tapped opening 23 adapted to receive a screw 24. A cross-rod 25 is rigidly connected between the upright portions 19 and 20 of the back member to give it rigidity.

Rigidly secured by welding or otherwise on the tops of the supporting members 11 and 12 adjacent the short portions 14 thereof is a substantially U-shaped front member 26 having a horizontal portion 27 and upstanding legs 28 and 29.

Adapted to connect the front member 26 and the back member 18 is a pair of frame members 31 and 32 each having a downwardly extending portion 33, the lower end of which is permanently pivotally connected by a pivot pin 34 to one of the upstanding legs 28 or 29 of the front member 26. Each of the frame members 31 and 32 also has a substantially horizontal portion 35 and an inwardly turned portion 36, the latter having a hole 37 in the end thereof through which the screw 25 is adapted to extend to detachably secure the frame member to the back member 18.

The rack 10 may be collapsed from the expanded position for use shown in Figs. 1 and 2 to the collapsed position shown in Figs. 3 and 4. This is accomplished by first removing the screws 24 so that the frame members 31 and 32 may be disengaged from the back member 18. The back member 18 is then rotated in a counterclockwise direction as seen in Fig. 2 on the rivets 22, which serve as pivots, down into a position as shown in Fig. 4 in which the horizontal portion 21 of the back member rests on the upper surfaces of the supporting members 11 and 12. The frame members 31 and 32 may then be rotated inwardly on their pivot pins 34, and downwardly, to the overlapping collapsed position thereof shown in Fig. 4. Alternatively, the frame members 31 and 32 may be folded inwardly and downwardly to their collapsed position before the back member 18 is folded downwardly, in which case, the back member would rest above and on top of the frame members. This latter method of collapsing the rack 10, however, is not as preferable as that first described in which the rack is collapsed to the position shown in Figs. 3 and 4, because in the latter method the collapsed volume will occupy somewhat more total volume than that achieved by the collapsing method described and shown in Figs. 3 and 4. In either case, how-
ever, the rack in its collapsed position will occupy only a small part of the volume occupied by the rack when in its extended position shown in Figs. 1 and 2. This permits the rack to be collapsed to a relatively small volume for shipment or storage in a relatively small container.

In Fig. 2 I show several phonograph records 39 in dotted lines stacked in the rack 10 in the position in which they would normally occupy. As will be understood, the records 39 rest on the supporting members 31 and 32 and against the back member 18. As shown in Fig. 2, the back member 18 is eared back slightly from the vertical and the supporting members 11 and 12 slope upwardly slightly from front to back, so that gravity retains the records 39 in their stacked position against the back member. Another feature of the invention is that the frame members 31 and 32 tend to retain the phonograph records in their stacked position to prevent them from falling out the open front end of the rack 10. To accomplish this, the frame members 31 and 32 have their straight horizontal portions 35 converting slightly from back to front when the rack is in the assembled position shown in Fig. 1. The horizontal separation of the horizontal portions 35 of the frame members 31 and 32 adjacent the inwardly turned portions 36 thereof is substantially greater than the diameter of the records 39, whereas the separation of the front portions of the elements 35 adjacent the downwardly extending portions 33 thereof is slightly less than the diameter of the records 39. Thus, if a record is displaced forwardly towards the open front end of the rack 10 it does not fall out of the rack but is caught and held by the converging horizontal portions 35 of the frame members 31 and 32.

Preferably, the supporting members 11 and 12, the back member 18, the front member 26, and the frame members 31 and 32 are formed of cylindrical rod stock merely bent to the desired configuration of the members, which provides a simple and economical construction which is quite rigid when assembled. It is to be understood, however, that such members may be formed of tubular stock or stock of other cross sectional configuration without departing from the spirit of my invention.

In the alternative form of my invention shown in Figs. 6 to 11, inclusive, a rack 40 has a pair of parallel supporting members 41 and 42, each of which includes a major straight portion 43 and a short downturned portion 44 forming a first foot member, the other end 45 of each supporting member forming a second foot member therefor. On the ends of the supporting members 41 and 42 are spherical pad elements 46, preferably formed of rubber or other cushioning and non-skidtable material. Connected to the tops of the supporting members 41 and 42 adjacent their rear ends, by welding or otherwise, is a transverse rod 48, the ends 49 of which extend slightly beyond the supporting members. Also connected to the tops of the supporting members 41 and 42 adjacent their short downturned portions 44, by welding or otherwise, is a tubular transverse member 50. Secured to the bottoms of the transverse rod 48 and the tubular transverse member 50, by welding or otherwise, is a second pair of parallel supporting members 51 and 52. The supporting members 41, 42, 51, 52, and the transverse rod 48 and tubular member 50 form a rigid grid adapted to support phonograph records or the like.

The rack 40 also has a generally U-shaped back member 53 having upright portions 54 and 55 connected by a horizontal portion 56. Each of the upright portions 54 and 55, as best shown in Fig. 8, has a hole 57 therethrough adapted to receive projecting portions 58 of spring clips 59 and 60 at each end of each of the upright portions 54 and 55, as best shown in Fig. 9, has a small flat plate 60 welded thereto, the plate being provided with a hole 61 adapted to fit over the projecting end 49 of the transverse rod 48. The U-shaped back member is preferably formed of resilient material and normally the separation of the lower ends of the upright portions 54 and 55 thereof is less than the distance between the supporting members 41 and 42, as shown in Fig. 10, so that the resiliency of the material of the back member retains it in the assembled position on the transverse rod 48 as shown in Fig. 6.

The rack 40 also includes a pair of frame members 63 and 64, each of which has a horizontal lower end 65 adapted to journal into an outer end of the tubular transverse member 50, has an upright portion 66, a major horizontal portion 67, and an in-bent back portion 68. A pair of the spring clips 59 is welded to each in-bent back portion 68 best shown in Fig. 8, the engagement of the projecting portions of the springs 58 with the openings 57 retained by the frame member rigid relative to the U-shaped back member 40. In this form of the invention, as previously described with regard to the form shown in Figs. 1 to 5, the major horizontal portions 67 of the frame members 63 and 64 converge towards their forward ends to prevent a large record or like object from falling forwardly and out of the open end of the rack.

The frame members 63 and 64 are separated from the balance of the rack 40 by pulling the clips 59 from the upright portions 54, 55 and moving the ends 65 out of the tubular transverse member 50 which permits the U-shaped back member 53 may be sprung outwardly to remove the rack 48. This disassociates all of the parts, which then may be packed substantially flat for shipment or storage.

An alternative construction for the clips 59 shown in Fig. 11. A U-shaped member 70 is formed from sheet material with arms 71 and a central section 72. Dimples or depressed zones 73 are formed adjacent the free end of each of the arms 71. The member 70 is bent into a U-shape with the arms 71 parallel and the dimples projecting toward each other. This bent unit is fixed to an in-bent back portion 68 of a frame member 63 or 64 and functions in the same manner as the clips 59 in Fig. 8.

Although I have shown and illustrated two preferred embodiments of my invention, it is understood that certain parts and elements thereof may be changed or altered without departing from the spirit of the invention, and I desire to be afforded the full scope of the following claims.

I claim as my invention:

1. In a phonograph record holding device, the combination of: base means, including a pair of parallel rods joined together adjacent their front ends by a transverse tubular member secured to said pair of rods and adjacent their rear ends by a transverse rod the ends of which extend beyond said parallel rods; a substantially U-shaped back member having upright portions connected by a horizontal portion, the lower ends of said upright portions being pivotally secured to said ends of the transverse rod outside of said parallel rods; and a pair of side members each having a substantially horizontal portion detachably journaled in one end of said transverse member and having an upstanding portion detachably fixed to one of the upright portions of said back member.

2. In a phonograph record holding device, the combination of: base means, including a pair of parallel rods joined together adjacent their front ends by a transverse tubular member secured to said pair of rods and adjacent their rear ends by a transverse rod the ends of which extend beyond said parallel rods; a substantially U-shaped back member having upright portions connected by a horizontal portion, the lower ends of said upright portions being pivotally secured to said ends of the transverse rod outside of said parallel rods; a second pair of rods between said first pair of rods and parallel thereto and secured at their ends to said transverse member and said transverse rod; and a pair of side members each having a substantially horizontal portion detachably journaled in one end of said transverse member and having an upstanding portion detachably fixed to one of the upright portions of said back member.
3. In a phonograph record holding device, the combination of: base means, including a pair of parallel rods joined together adjacent their front ends by a transverse tubular member secured to said pair of rods and adjacent their rear ends by a transverse rod the ends of which extend beyond said parallel rods, said rods at their front ends having downturned foot portions and their back ends extending beyond said transverse rod; a substantially U-shaped back member having upright portions connected by a horizontal portion, the lower ends of said upright portions being pivotally secured to said ends of the transverse rod outside of said parallel rods; a pair of side members each having a substantially horizontal portion detachably journaled in one end of said transverse member and having an upstanding portion detachably fixed to one of the upright portions of said back member; and a spherical foot member on each of the ends of said parallel rods and adapted to support the device on a plane surface.

4. In a foldable phonograph record holding device, the combination of: a pair of horizontally spaced supporting members, each having a major straight portion of substantial length and a short portion at one end downturned to form a first foot member, the other end of each of said straight portions forming a second foot member; a substantially U-shaped back member having upright portions and a horizontal portion connecting said upright portions, the lower end of each of said upright portions being pivoted relative to one of said supporting members adjacent to said other end thereof, the length of said horizontal portion of said back being greater than the horizontal separation of said supporting members and the height of said back member being approximately the length of said straight portions of said supporting members; a substantially U-shaped front member having a substantially horizontal portion and upstanding legs at the ends thereof, said horizontal portion being rigidly secured to the straight portions of said supporting members adjacent to said first foot members thereof; and a pair of frame members, each of which is pivotally secured at one end to the top of one of said legs and the other end of which is adapted to be releasably secured to one of said upright portions of said back member, and each of which comprises a rod element bent to provide a downwardly extending portion, the lower end of which is pivotally secured to the upper end of one of said legs, a substantially horizontal portion extending towards said back member, and an inwardly extending portion adapted to be releasably secured to one of said upright portions of the back member, said horizontal portions converging from back to front, said horizontal portions adjacent said inwardly extending portions being spaced apart horizontally a distance greater than the diameter of a phonograph record, and said horizontal portions adjacent said downwardly extending portions being spaced apart horizontally a distance less than the diameter of such record.

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