This invention relates to new and useful improvements in a collapsible shelf and bookcase.

The invention has for an object the construction of a device as mentioned which is characterized by a plurality of superimposed shelves, and ropes associated with the shelves in a particular manner for holding them in relatively fixed positions.

More specifically, the invention contemplates passing the ropes through openings in the shelves and providing a means for fixedly connecting the ropes with the shelves.

Still further, in one form of the invention, it is proposed to wind the ropes around portions of the shelves in a specific manner, and it is proposed to mount clips on the shelves engaging over portions of the ropes to secure these parts fixedly together.

In another form of the invention it is proposed that the ropes be passed through tubes mounted on the shelves, and to provide projecting portions from the tubes to clip and hold the ropes.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a perspective view of a collapsible shelf and bookcase constructed according to this invention.

Fig. 2 is a fragmentary enlarged plan view of Fig. 1.

Fig. 3 is a front elevational view of Fig. 2.

Fig. 4 is a fragmentary enlarged vertical sectional view taken on the line 4—4 of Fig. 1.

Fig. 5 is a perspective view of one of the clips used in the device.

Fig. 6 is a schematic view to show the manner in which the ropes are wound about portions of the shelves.

Fig. 7 is a perspective view of a collapsible shelf and bookcase constructed according to another form of the invention.

Fig. 8 is a fragmentary vertical sectional view on the line 8—8 of Fig. 7.

Fig. 9 is a perspective view of the rope holding tubes illustrated in Fig. 7.

Fig. 10 is a horizontal sectional view, taken on the line 10—10 of Fig. 9.

The collapsible shelf and bookcase, according to this invention, includes a plurality of superimposed shelves 10, 11 and 12. Ropes 13 and 14 pass through openings in these shelves and are associated with holding means for fixedly connecting the ropes to the shelves. The upper ends of the ropes 13 and 14 are connected with rings 15 provided with hooks 16 by which the bookcase may be supported on an overhead bar or other support.

Each of the shelves is formed with notches 18 at one side of the front and rear edge thereof, and a central notch 19 at the center of the side edge. Each of these shelves is formed with additional notches 20 at the front and rear edges near the other side thereof, and a central notch 21 at the center of the side edge between the notches 20. The rope 13 is wound around portions of the shelves between the notches 18, while the rope 14 is wound around portions of the shelves between the notches 20. The winding is identical for each of the ropes. This winding may be understood by examining Fig. 6. Starting at one end of the rope 13 adjacent the hook 16 the rope extends down to the notch 18 in the top shelf 10, then around the bottom face of the top shelf, up through the center notch 19, across the top face and down through the notch 18, and further down to the next shelf 11. At this next shelf the rope continues through one of the notches 18 around the bottom of the shelf, up through the central notch 19, across the top of the shelf and down through the same notch 18.

The rope then continues downwards to the third shelf 12, and here it extends down through the notch 18, around to the center notch 18, up across the top face of the shelf, down through the same notch 18 across the entire depth of the bottom shelf 12 along the bottom thereof and up through the notch 18 at the rear side of the shelf 12. The rope then continues around and around back to the point at the hook 16, in a manner identical to that described relative to the other side.

In order to fixedly connect each of the shelves to the rope certain fastening elements are used. These fastening elements comprise metallic clips 25. Each metallic clip has a semi-cylindrical tubular portion 25a adapted to extend over portions of the ropes, and down-turned flanges 25b along the edges thereof. Each clip 25 has an opening 26 for a bolt. The clips 25 are used in pairs (see Fig. 4) one upon the top face of the shelf and the other upon the bottom face. A bolt 27 is engaged through the openings 26. The clips are arranged to extend over the central
notches 19. The ends of the clips engage over portions of the rope immediately adjacent the notches 19. When the bolts 21 are drawn tight the slips will securely hold portions of the rope.

In Figs. 7 and 8 a modified form of the invention has been disclosed which distinguished from the prior form in the mounting and arrangement of the ropes. According to this form there is a plurality of superimposed shelves, 28, 29 and 30. Tubes 31 are mounted through the corners of these shelves from the top to the bottom. These tubes 31 are formed with projecting flange portions 31a below the shelves for fixedly mounting the tubes thereon. Ropes 33 pass through the tubes 31. Portions 31b are crimped in the tubes 31 and engage and hold the ropes 33. The upper ends of the ropes 33 are connected with hooks 34 which may be used to suspend the article.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. A collapsible bookrack or the like comprising a plurality of superimposed shelves adapted to be supported in spaced relation to each other, the sides of each of said shelves being divided into front and rear portions by a notch extending inwardly from each side edge thereof, a supporting rope at each end of said rack, said ropes being wound, successively, around said front portions and, successively, around said rear portions, and clamping means at each of said notches for holding said ropes in non-slip relationship with said shelves.

2. A collapsible bookrack or the like as claimed in claim 1, each of said clamping means including an element engaging the shelf adjacent said notch, and the portion of the rope wound around the front and rear portions of the shelf.

3. A collapsible bookrack or the like as claimed in claim 1, each of said clamping means including upper and lower jaws, and a threaded bolt engaged through said jaws and disposed in said notch.

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