PORTABLE STORAGE AND CARRYING STRUCTURE

Inventor: William Harold Monahan, Markham, Canada
Assignee: Cameron-McIndoo Limited, Don Mills, Ontario, Canada
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References Cited
UNITED STATES PATENTS

422,717 3/1890 Caldwell .................. 220/94 A
957,859 5/1910 Bliss .................. 206/73
1,256,448 2/1918 Dyson .................. 229/52 B
1,369,448 1/1921 McNab .................. 224/47
2,312,598 3/1943 Sprague .................. 229/52 B
2,462,789 2/1949 Trolten .................. 206/73
2,642,876 6/1953 D'Helly .................. 206/73
3,014,635 12/1961 Mains et al .......... 229/52 B
3,220,625 11/1965 Protheroe ............... 224/45 N
3,246,940 4/1966 Karper .................. 312/183

FOREIGN PATENTS OR APPLICATIONS
446,769 5/1936 Great Britain .......... 312/183

Primary Examiner—Robert J. Spar
Assistant Examiner—Kenneth Noland
Attorney, Agent, or Firm—Ridout & Maybee

ABSTRACT

In a portable structure which is intended to be used for the storage and carrying of items of school supplies and which comprises a rectangular base wall with an upstanding front, rear and side walls projecting from the base wall, there is incorporated an upper wall disposed in opposed, parallel spaced relationship to the base wall and extending from the rear wall to a position between the rear wall and the opposed front wall so that, when the structure is being used for carrying purposes with the structure freely suspended by a carrying handle defined by an opening in the front wall, the upper wall substantially prevents items of school supplies within the structure from falling therefrom. This desirable result is enhanced where the rear wall is upwardly inclined in the direction from the upper wall to the base wall when the structure is in the above condition in which it is being used for carrying purposes. The front wall substantially prevents items of school supplies from inadvertently falling from the structure when it is used for storage purposes substantially in the manner of a drawer with the base wall lowermost and horizontally disposed.

10 Claims, 4 Drawing Figures
PORTABLE STORAGE AND CARRYING STRUCTURE

This invention is concerned with a portable storage and carrying structure, and more particularly with such a structure which is intended to be used by a school child for the storage of various items of school supplies such as, for example, school books, writing pads, sheets of exercise paper, pencils, erasers, and the like, when these items are not in use, and for the transportation of these items by the school child from, for example, one classroom within the school to another classroom, or between the child’s home and the school. When the structure is being used for storage of the appropriate items of school supplies, the structure may, for example, be slidably mounted under a desk top or suspended from a support bracket provided on a work table, or may be disposed in a suitable storage rack which is adapted to accommodate a plurality of such structures.

Structures of the general type described above have hitherto been proposed such as, for example, in U.S. Pat. No. 3,220,625 which issued on Nov. 30, 1965 to D. W. Protheroe. In this U.S. Pat. to Protheroe there is disclosed a tote box comprising a bottom 7, a front face 3, a back face 4 and two side panels 5 and 6, an opening 10 being provided in order to facilitate carrying of the box with, for example, books 9 disposed therein, when the box is in the orientation shown in FIG. 1 of the drawings of the patent. It will also be noted that as is shown in FIGS. 3 and 4 of the drawing of the patent the box may be used for storage purposes by being slidably mounted beneath a desk top 15. As will clearly be appreciated from FIGS. 3 and 4 of the drawing of the patent, there is, however, a substantial risk, when the box is operatively disposed in the orientation shown in these views, of items such as pencils and erasers which may be stored within the box rolling to the opening and falling from the box, or of school books or sheets of exercise paper likewise falling from the box. U.S. Pat. No. 3,273,770 which issued on Sept. 20, 1966 to L. A. Miller likewise discloses a carrier for school books. It will be noted, however, that even if the structure disclosed by Miller was used for storage purposes by, for example, being slidably mounted beneath a desk top, and in this connection it is to be emphasized that the patent to Miller in no way teaches or suggests that the structure disclosed therein may in fact be used in this manner, there would again be a substantial risk of books or other items of school supplies stored within the carrier falling therefrom.

It is a primary object of the present invention to provide a portable storage and carrying structure within which items of school supplies as described above and which are normally used by a school child may be disposed, but in which the above-described disadvantage of the structures disclosed by Protheroe and Miller is substantially overcome.

In order that the invention may be more clearly understood and more readily carried into effect the same will now be described, by way of example, be more fully described with reference to the accompanying drawings in which FIG. 1 is a partially broken away view of a structure according to a preferred embodiment of the present invention;

FIG. 2 which appears on the second sheet of the drawings is a sectioned view on the line 2—2 in FIG. 1 but with the structure in a different orientation from that in which it is shown in FIG. 1;

FIG. 3 is a view, on a reduced scale, of the structure shown in FIG. 1 slidably mounted for storage purposes below a desk top which for clarity is indicated in chain-dotted lines; and

FIG. 4 is a view, on a reduced scale, of the structure shown in FIG. 1 suspended, for storage purposes, from a support bracket mounted on a work table.

With reference to the drawings, the portable structure illustrated therein comprises base wall means constituted by a substantially planar base wall 10 incorporating a slightly recessed portion 11, an upward front wall 12, an upward standing side wall means constituted by side walls 14, the base wall 10 being of substantially rectangular form with the walls 12, 13 and 14 projecting therefrom. The side walls 14 between which the slightly recessed portion 11 of the base wall 10 extends, are substantially parallel to one another and are each in a plane substantially at right angles to the base wall 10, the front wall 12 being likewise substantially at right angles to the base wall and also being substantially at right angles to each of the side walls 14. The rear wall 13 may likewise be substantially parallel to the front wall 12 and substantially at right angles to the base wall 10 and to each of the side walls 14, although it will be noted that in the preferred embodiment shown in the drawings the major portion of the rear wall 13 is, at least on the inner face thereof, inclined. This feature of the rear wall 13 together with the purpose thereof is hereinafter more fully explained.

Fixed upper wall means constituted by a fixed upper wall 16 is disposed in opposed, spaced relationship to the base wall 10, the upper wall 16 being substantially parallel to the base wall 10 and extending from the upper edge of the rear wall 15 to a position between the rear wall 13 and the opposed front wall 12. To ensure that there is substantially no risk of items of school supplies such as, for example, school books, writing pads, sheets of exercise paper, pencils, erasers, and the like, inadvertently falling out of the structure particularly when, as hereinafter more fully explained, the structure is being used for carrying such items of school supplies, while at the same time ensuring that such items of school supplies may readily be disposed within and intentionally removed from the structure, it is preferred that the distance between the rear wall 13 and the position to which the upper wall 16 extends is of the order of 35 to 40 percent of the distance between the rear wall 13 and the front wall 12.

The structure is provided with carrying means for carrying the structure in an orientation, such as that shown in FIG. 2, in which the rear wall 13 constitutes the lower portion and the front wall 12 constitutes the upper portion of the structure, this carrying means in the preferred embodiment shown in the drawings being constituted by the portion 17 of the front wall 12 between an opening 18 provided in the front wall 12 and the adjacent free upper edge of the front wall 12, the opening 18 thus facilitating carrying of the structure. This upper edge of the front wall 12 is constituted by an inwardly directed flange 19, the portion 17 of the front wall 12 including a curved portion 20 (FIG. 2) provided with a plurality of bracing ribs 21 which are spaced apart along the length of the portion 20. At the
portion 17 the front wall 12 proper is provided with a slot 22 which is substantially coterminous with the curved portion 20, spaced slots 23 being provided in the front wall 12 at the ends of the portion 17. Thus the portion 17 of the front wall 12 includes the curved portion 20 together with the spaced ribs 21 which are, however, set-back somewhat from the plane containing the front wall 12 proper. A strip 24 on which informational indicia such as, for example, the name of the school child using the structure, may be presented is removably mounted on the portion 17 of the front wall 12 by disposition of the end portions of the strip 24 through the slots 23, the strip 24 being, of course, so positioned that the remaining portion of the strip 24 on which the indicia in question is presented is visible, through the slot 22 in the front wall 12 proper, on the outer face of the front wall 12. Stops 25 may be presented on the inner face of the front wall 12 for abutting contact of the ends of the strip 24 therewith, thereby to ensure correct positioning of the strip 24 in the direction of the length thereof. The strip 24 is operatively snapped into position, the material of which the strip 24 is formed being sufficiently resilient to permit this to be achieved.

It is to be emphasized that in alternative embodiments (not shown) the carrying means need not be constituted by a distinct portion of the structure but may be constituted simply by, for example, the upper edge portion of the front wall 12.

The upper edges of the side walls 14 present outwardly projecting flanges 26 which are substantially parallel to the base wall 10 and which may be slidably mounted on support runners 27 which are secured to the underside of a desk top 28 or the like when it is desired to use the structure for storage purposes, as shown in FIG. 3 of the drawings. It will be noted that when the structure is used in this manner it corresponds in function to a drawer and the front wall 12 of the structure substantially prevents items such as pencils and erasers from rolling out of the structure and falling therefrom, and also prevents other items such as school books and writing pads from falling from within the structure. It will also be appreciated that with the structure used for storage purposes in the manner shown in FIG. 3 the portion 17 of the front wall 12 serves as a handle by means of which the structure may be slidably withdrawn from under the desk top 28 in order to gain access to the interior of the structure.

In FIG. 4 there is illustrated an alternative manner in which the structure may be disposed when being used for storage purposes. With particular reference to this view, 29 denotes a work table on the underside of which a wire support bracket 30 is mounted, the lower end portions of the bracket 30 being of upturned form so that the structure may be supported on the bracket 30 by being freely suspended by the portion 17 of the front wall 12 which is engaged with the upturned lower end portions of the bracket 30. It is to be emphasized that the structure when being used for storage purposes may be disposed other than as shown in FIG. 3 or FIG. 4. Thus, for example, the structure when being used for storage purposes may be disposed, in the orientation in which it is shown in FIG. 3, in a suitable storage rack which is adapted to accommodate a plurality of such structures.

While the structure as shown in FIG. 4 is being used for storage purposes, it will be appreciated that when the structure is being used for carrying purposes with the hand of the school child disposed through the opening 18 and supporting the portion 17 of the front wall 12 so that the structure is freely suspended thereby, the structure is in substantially the orientation in which it is shown in FIG. 4, the rear wall 13 constituting the lower portion and the front wall 12 constituting the upper portion of the structure when the structure is in this orientation. It will be noted that with the structure in this orientation the rear wall 13 is upwardly inclined relative to the horizontal in the direction from the upper wall 16 to the base wall 10, the rear wall 13 thus being inclined at an acute angle to the upper wall 16. The inner face 15 of the rear wall 13 may be of concavely curved form in the direction from the upper wall 16 to the base wall 10, as is most clearly shown in FIG. 2.

The purpose of this feature of the rear wall 13 being inclined is to ensure that with the structure in this orientation the lower ends of school books and particularly flexible sheets 31 as shown in FIG. 2 tend to slide down the rear wall 13 to the corner adjacent to the upper wall 16 with the result that the upper end of these sheets 31 tend to be disposed against the base wall 10. Thus, these upper ends of the sheets 31 tend to be maintained away from the open face of the structure through which items of school supplies are inserted into and withdrawn from the structure, so that there is virtually no risk of school books, sheets of exercise paper and the like inadvertently falling out of the structure while the structure is being carried. It will be appreciated, of course, that if the rear wall 13 is not inclined as hereinbefore described the upper ends of the sheets 31 could readily hang out through the open face of the structure with the possibility that these sheets could inadvertently fall from the structure while the structure is being carried.

In the preferred embodiment shown in the drawings the rear wall 13 is centrally provided with a non-inclined portion 32 which is in a plane substantially at right angles to the planes containing the base wall 10 and the upper wall 16, the function of this portion 32 being to permit the structure when disposed in the orientation shown in FIG. 2 in which the rear wall 13 constitutes the lower portion and the front wall 12 constitutes the upper portion of the structure to be disposed in free-standing relationship on a horizontal surface. As will be appreciated, the incorporation of this portion 32 in the rear wall 13 does not, of course, eliminate the above-described advantages of having the rear wall 13 inclined as hereinbefore described.

It is to be understood that in alternative embodiments (not shown) of the invention the entirety of the inner face 15 of the rear wall 13 may be inclined as hereinbefore described with the entirety of the outer face of the rear wall 13 being in a plane substantially at right angles to the planes containing the base wall 10 and the upper wall 16. Such alternative embodiments would, of course, also exhibit the above-described advantages provided by the inclination of the rear wall 13 to the portion 32 in the preferred embodiment hereinbefore described with reference to the drawings, although in such alternative embodiments the rear wall 13 would be of increased thickness adjacent to the base wall 10.

Grooves 33 are provided in the opposed inner faces of the side walls 14 so that, particularly when the struc-
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A structure is being used for storage purposes in the manner shown in FIG. 3, a partition wall (not shown) may be removably mounted with side edge portions of the partition walls in sliding engagement within the grooves 33.

With the exception, of course, of the removable strip 24 and the removable partition wall the structure may be integrally formed of a moulded plastics material, such as, for example, injection moulded polypropylene, or polyurethane. The removable strip 24 and the removable partition wall may be formed of the same material.

What I claim as my invention is:

1. A portable storage and carrying structure comprising base wall means, and upstanding front, rear and side wall means projecting from the base wall means, fixed upper wall means being disposed in opposed, spaced relationship to the base wall means and extending from the rear wall means to a position which is between the rear wall means and the opposed front wall means and which is spaced from the rear wall means at least 35 percent of the distance between the rear wall means and the front wall means, carrying means being provided for carrying the structure with the structure freely suspended by said carrying means in an orientation in which the rear wall means constitutes the lower portion and the front wall means constitutes the upper portion of the structure, and the rear wall means being so formed that with the structure in said orientation at least a portion of the inner face of the rear wall means is inclined upwardly relative to the horizontal in the direction from the upper wall means to the base wall means.

2. A structure according to claim 1, wherein the inner face of the rear wall means is concavely curved in the direction from the upper wall means to the base wall means.

3. A structure according to claim 1, wherein at least the outer face of the rear wall means includes a non-inclined portion so that, with the structure in an orientation in which the rear wall means constitutes the lower portion and the front wall means constitutes the upper portion of the structure, the structure may be disposed in free-standing relationship on a horizontal surface.

4. A structure according to claim 1, wherein the distance between the rear wall means and the position to which the upper wall means extends is 35 – 40 percent of the distance between the rear wall means and the front wall means.

5. A structure according to claim 1, wherein a strip on which informational indicia may be presented is removably mounted on the front wall means whereby to be visible on the outer face of said front wall means.

6. A structure according to claim 1, wherein the side wall means present outwardly projecting flanges which are substantially parallel to the base wall means.

7. A structure according to claim 1, wherein grooves are provided in opposed inner faces of the side wall means, a partition wall being removably mounted with side edge portions of the partition wall in sliding engagement within the grooves.

8. A structure according to claim 1, wherein the apparatus is integrally formed of a moulded plastics material.

9. A portable storage and carrying structure comprising a substantially rectangular base wall, an upstanding front wall, an upstanding rear wall, and two upstanding, substantially parallel side walls, the front, rear and side walls projecting from the base wall, a fixed upper wall being disposed in opposed substantially parallel spaced relationship to the base wall and extending from the rear wall to a position between the rear wall and the opposed front wall, an opening being provided in the front wall for facilitating carrying of the structure with the structure in an orientation in which the rear wall constitutes the lower portion and the front wall constitutes the upper portion of the structure, and a portion of the rear wall being substantially at right angles to the base wall and the upper wall with the remainder of the rear wall being inclined at an acute angle to the upper wall.

10. A portable storage and carrying structure comprising base wall means, and upstanding front, rear and side wall means projecting from the base wall means, fixed upper wall means being disposed in opposed, spaced relationship to the base wall means and extending from the rear wall means to a position between the rear wall means and the opposed front wall means, an opening being provided in the front wall means adjacent to a free edge of said front wall means with the portion of the front wall means between the opening and said free edge of the front wall means constituting carrying means for carrying the structure with the structure in an orientation in which the rear wall means constitutes the lower portion and the front wall means constitutes the upper portion of the structure, said portion of the front wall means constituting the carrying means being provided with spaced slots, and a strip on which informational indicia may be presented being removably mounted on said portion of the front wall means by disposition of end portions of the strip through the slots with the remaining portion of the strip positioned on the outer face of the front wall means.