PORTABLE WEIGHT STORAGE SYSTEM AND WEIGHT SET KIT

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ABSTRACT

The invention comprises a portable weight set storage system and weight set kit. The weight set storage system comprises a portable and compact case that also functions as a display rack for the weight sets. The weight set can be stored in the lid portion and/or the bottom portion of the case. The case comprises identical lid and bottom halves each of which have vertical slots in their inner surfaces. These vertical slots are designed to hold adjustable weight discs in an upright or vertical position when the case is resting in a horizontal plane. The weight set storage system also comprises indentations for storing dumbbell bars and barbell bars. These indentations are smaller than the actual bar, hence the bar has to be forced or snap-locked into the indentation, thus securing the bar. When the case is in a closed position, the lid vertical slots overlap with the bottom vertical slots to form a compact enclosure that securely holds the discs in place.
PORTABLE WEIGHT STORAGE SYSTEM AND WEIGHT SET KIT

FIELD OF INVENTION

[0001] The present invention relates to portable weight training equipment. More particularly, the invention pertains to a portable weight set storage system and weight set kit that is also used to display the weight sets.

BACKGROUND

[0002] The boom in exercise equipment and fitness centers is directly correlated to a growing awareness of the benefits provided by exercise. It is commonly acknowledged that weight-bearing exercises should form an integral part of an individual's exercise regime. Weight-bearing exercise, involving the use of weights, improves bone strength and bone density, which in turn improves overall coordination and physical health. In fact, weight training, along with a proper nutritional approach, is believed to delay the onset of problems associated with osteoporosis and other age and lifestyle-related problems like diabetes.

[0003] However, fitness centers do not fit within the budgetary and lifestyle constraints of most people. An alternative is to workout at home using portable exercise kits. Various types of portable and non-portable cases for carrying weights and other exercise paraphernalia have been disclosed in the prior art. However, none of these teach a compact and portable case for storing adjustable weight discs in an upright position. The prior art teaches cases that store weight discs in a horizontal position. These cases hold weight discs in circular grooves, one on top of the other, thus making it hard to see the weight configuration. Since the discs are placed on top of each other, there is also the possibility of the disc surfaces getting scratched or dented due to their rubbing against each other. Removing the weight discs from these circular grooves is also problematic, especially with the heavier weight discs, and the risk of injury due to a disc slipping out of a person's grasp is omnipresent. The weight discs are typically held in the lid portion of the case or in the bottom portion of the case, depending on the location of the circular grooves. The number of weight discs stored is limited by the number of circular grooves in the lid or in the bottom of the cases.

[0004] There exists a need for a system that can be used to store weight sets and that can also function as a rack to display the weight sets, when needed. More importantly, a case that allows easy removal of weight discs is desirable.

SUMMARY

[0005] The present invention is a portable weight storage system and weight set kit. The weight set storage system comprises a case that also functions as a display rack for the weight sets. The weight set is capable of being stored in the lid portion and/or the bottom portion of the case, thereby maximizing the resistance training options available. The present invention is portable and configured such that the weight discs are securely held in an upright position during transportation. One advantage of the present invention is that the case comprises identical lid and bottom halves each of which comprise vertical slots in their inner surfaces. These vertical slots are designed to hold adjustable weight discs in an upright or vertical position. This ergonomic design reduces the potential of injury due to incorrectly lifting the weight discs out of the case. Additionally, since the weight discs are held vertically, the user can easily observe the various weight configurations available and design an appropriate resistance training session. Since the weight discs are held vertically and are not placed one on top of the other, the risk of the discs getting scratched or dented due to constant rubbing against each other is minimized. The weight set storage system also comprises indentations for storing dumbbell bars and barbell bars. These indentations are smaller than the actual bar, hence the bar has to be forced or snap-locked into the indentation, thus securing the bar. When the case is in a closed position, the lid vertical slots overlap with the bottom vertical slots to form a compact enclosure that securely holds the discs in place. In the closed position, the portable weight storage system and weight set kit can be carried and transported with a minimum of movement and shifting of weights.

[0006] In one embodiment, the present invention is a system for storing one or more weight sets. The weight sets comprise adjustable weight dumbbells, fixed weight dumbbells, barbells, dumbbell bars, barbell bars, and adjustable weight discs. The weight set storage system has a case comprised of an elastomeric material. The case, comprising a bottom and lid pivotally attached to each other, further comprises a plurality of vertical slots in the inner surfaces of both the bottom and the lid. These slots are configured to hold weight discs vertically. Each vertical slot comprises a dimension configured to hold one or more weight discs of varying configurations and weights. An advantage of the present invention is that the case lid and the case bottom are symmetrical and identical to each other such that the weight discs can be stored in a vertical position in both the lid vertical slots and in the bottom vertical slots, when the case is in an open configuration, and in either the lid vertical slots or in the bottom vertical slots when the case is in a closed configuration. When the case is in a closed position, the weight discs are held securely in place within the enclosure formed by overlapping lid vertical slots and bottom vertical slots. The case further comprises one or more protuberances and/or ridges on the outer surface of the case bottom that fit into one or more recesses and/or depressions on the outer surface of another case lid. This facilitates the secure stacking of multiple cases.

[0007] In another embodiment, the case further comprises stabilizing projections and balancing projections along its width and length sides. These projections allow the case to be balanced upright. In an open and upright configuration, the case functions as a weight set display rack. When used as a display rack, the weight sets can be held in both the lid vertical slots and the bottom vertical slots. This maximizes the weight training options available to the user. The portable weight set storage system of the invention further comprises grooves for holding collars for securing, or locking in place, the adjustable weight discs to the dumbbell bar or the barbell bar.

[0008] The portable weight set kit of the invention is made from an elastomeric case. The case comprises weight sets that can include adjustable weight dumbbells, fixed weight dumbbells, barbells, dumbbell bars, barbell bars, adjustable weight discs and locking collars and combinations thereof. Adjustable weight discs are stored in vertical slots in the inner surfaces of either the lid or bottom of the case. The case further comprises identical protrusions on the lid and the bottom that overlap to form a handle, convenient for
portability, when the case is in a closed position. The portable weight set kit has a locking means for securing the contents of the kit.

**BRIEF DESCRIPTION OF DRAWINGS**

[0009] FIG. 1a depicts an exemplary portable weight set kit.

[0010] FIG. 1b depicts an exemplary weight set storage system in an open configuration.

[0011] FIG. 2a depicts a side view of the lid of a weight set storage system in a closed configuration.

[0012] FIG. 2b depicts a side view of the bottom of a weight set storage system in a closed configuration.

[0013] FIG. 3 depicts a side view of the locking means in an exemplary weight storage system.

**DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS**

[0014] FIGS. 1a and 1b illustrate a weight set kit and a portable weight set storage system respectively. As seen in FIG. 1b, the portable and compact system 10 is used for displaying, storing and carrying weight sets. In this embodiment of the portable weight set kit 50, the weight sets comprise adjustable weight dumbbells, fixed weight dumbbells, barbells, dumbbell bars and barbell bars 20, and adjustable weight discs 15 and combinations thereof. The shape of the discs 15 can be circular, hexagonal or any other angular shape. The system of the invention provides an ergonomically designed case 100, containing a lid 125 and a bottom 175, for storing weight sets. The portable weight set kit 50 includes the case 100 and a complete weight set that can be used in various weight bearing exercises. The lid 125 and bottom 175 of the case 100 are hinged to each other. The case 100 can alternate between a closed position FIG. 2a and FIG. 2b and an opened position FIG. 1a and FIG. 1b. The case 100 can also be left open in an upright position such that the case 100 acts as a display rack for the weight sets, as seen in FIG. 1a.

[0015] FIG. 1b illustrates one or more weight discs 15 held in vertical slots in the inner surface of the lid 130 or in vertical slots in the inner surface of the bottom 180 of the case 100. The term “vertical” is used with the slots to describe the orientation of the slots when the case is in a plane that is horizontal to its resting surface. In either position, when the case 100 is closed, and in a horizontal position, the lid vertical slots 140 overlap with the bottom vertical slots 190 to form a close-fitted enclosure that can securely hold the discs 15 in place. The case 100 may also be used as a display rack for the weight sets. When used as a display rack, in the open configuration, the case 100 can hold complete weight sets in both the lid inner surface 130 and the bottom inner surface 180. FIG. 1b shows the weight set storage system 10 in an open position. The weight set storage system 10 comprises a case 100 having a bottom 175 and a lid 125 pivotally attached to the bottom 175. The bottom 175 comprises a bottom inner surface 180 and a bottom outer surface 185. The bottom inner surface 180 defines a plurality of bottom vertical slots 190. The lid 125 comprises a lid inner surface 130 and a lid outer surface 135. The lid inner surface 130 also defines a plurality of vertical slots 140. Each lid vertical slot 140 can be aligned with a bottom vertical slot 190 to form an enclosure that is configured to securely hold one or more weight discs 15 in a vertical or upright position within the enclosure, when case 100 is in a closed position. In the closed position, the portable weight set storage system and weight set kit 50 of FIG. 1a, can be transported with a minimum of shifting, rubbing against each other or movement of the weight discs 15 and dumbbell or barbell bars 20, with the kit. The alignment of the lid vertical slot 140 over the bottom vertical slot 190 securely holds the discs 15 in place.

[0016] The weight discs 15 may be positioned, within either the lid vertical slots 140 or the bottom vertical slots 190, such that the discs 15 are either perpendicular to the surface on which the case 100 is placed or the discs 15 may be slanted to face one of the two length sides or one of the two width sides. The case 100 comprises an elastomeric material. The dimensions of the case can be adapted to meet the size and shape of weight sets to be stored. The dimensions and shape of the lid 125 and bottom 175 are identical to each other and each lid vertical slot 140 is symmetrical and identical to a bottom vertical slot 190. The dimension or shape, of each lid vertical slot 140 and each bottom vertical slot 190, is adapted to confine or hold in place one or more discs 15. Thus, when the case 100 is in an open configuration, a duality of weight sets may be securely stored in the case 100, that is one set of weights may be held in the lid 125 section and another set of weights may be held in the bottom 175 section of the case 100.

[0017] The weight set storage system 10 further comprises one or more indentations 126 in the lid inner surface 130 and one or more indentations 126 in the bottom inner surface 180. The dimension of the indentation 126 is slightly smaller than a dumbbell bar or a barbell bar 20, such that the dumbbell bar or the barbell bar 20 will have to be forced into position within the indentation. Advantageously, because the case 100 comprises an elastomeric material, the dumbbell bar or the barbell bar 20 is snap-locked in position within the indentation 126 so that the dumbbell bar or the barbell bar 20 will not slip out of or shift within the case 100 when the case 100 is in either the open position or in the closed position. The snap-locking indentations 126 are combined with the vertical slots enable the weight set kit 50 to be either displayed in an upright and open position or transported in a closed position without the discs 15 and the bars 20 falling out and without any excessive shifting or rubbing against each within the closed case 100.

[0018] The bottom 175 and the lid 125 each comprise identical protrusions 152a and 152b in corresponding positions. These protrusions 152a and 152b are designed to overlap with each other to form a handle 154 when the case 100 is in a closed position. The system 10 is compact and the handle 154 facilitates the portability of the system 10.

[0019] The inner surface 130 of the lid 125 and the inner surface 180 of the bottom 175 further comprise one or more grooves 166. The grooves 166 are configured to receive one or more collars 25 for locking the adjustable weight discs 15 to a dumbbell bar or a barbell bar 20. The locking collars 25 may be placed either horizontally or vertically within the grooves 166.

[0020] The case 100 is configured to hold from a 10 lb dumbbell weight set to a 100 lb or greater barbell weight set. As shown in FIG. 2a, the lid outer surface 135 defines a depression 136. As depicted in FIG. 2b, the bottom outer
surface 185 comprises a ridge 186. The depression 136 of the lid outer surface 135 is configured to receive the ridge of the bottom outer surface 185. When two or more cases 100 are placed one on top of the other, the bottom ridges 186 are held within the lid depressions 136. This allows two or more cases 100 to be stacked securely. In another embodiment, the lid outer surface 135 defines one or more recesses 138 and the bottom outer surface 185 comprises one or more protuberances designed to receive the one or more lid recesses 138 when two or more cases 100 are placed on top of each other.

[0021] The case 100 comprises two length sides 127 and two width sides 128. Either or both of the two length sides 127 of the case can comprises one or more balancing projections 140 for allowing the case 100 to stand upright on the balancing projections 140. Either or both of the two width sides 128 of the case can comprise one or more stabilizing projections 142 for allowing the case 100 to stand upright on the stabilizing projections 142. The case 100 is portable and can be carried using the handle 154.

[0022] FIG. 3 illustrates that the case 100 can be secured by clasp means 162 on the lid 125 and the bottom 175. The lid 125 and the bottom 175 further comprise one or more symmetrical apertures 164 in corresponding positions such that locking means, preferably a wire chisel or a combination lock, may be inserted through the apertures 164 so that the case 100 is further secured. Other conventional securing means, such as a lock and key, or an authorized access code may also be employed to secure the case 100. The outer surface of the case bottom 175 comprises a ridge 186 and one or more protuberances 188 and the outer surface of the case lid 125 defines a depression 136 to receive the ridge 186 and one or more recesses 138 to receive the one or more protuberances 188 so that a plurality of cases 100 may be securely stacked.

[0023] The portable weight set kit 50 of FIG. 1a contains essentially all the equipment needed for weight training and muscle building. A manual or exercise guide for weight training can also be included within the case 100. The vertical slots in the lid 125 and the bottom vertical slots 190 are configured to hold one or more adjustable weight discs 15 in a vertical or upright position. The kit 50 also comprises one or more dumbbell or barbell bars 20 and locking collars 25 to secure the weight discs 15 to the dumbbell bar or the barbell bar 20.

[0024] The user can set up the kit 50 at any convenient location. Once the user is ready to start weight training, he or she can open the case 100 and since the discs 15 are stacked vertically, the user can easily select a suitable combination of weight discs 15 and bars 20. Since the discs 15 are stacked vertically in the lid vertical slot 140 or the bottom vertical slot 190, the discs 15 are easier to lift and remove from the case 100. The user can then attach the discs 15 to the dumbbell bar or the barbell bar 20 and secure the discs 15 to the bar 20 using the locking collars 25. Once the user is done with the weight training, the weight sets can be easily restored back in the kit 50. In another embodiment, the kit may be configured to hold fixed weight dumbbells and barbells. The user can remove the dumbbell or the barbell from the case 100 and start training without modifying the weight configurations.

[0025] The foregoing description is illustrative and explanatory of preferred embodiments of the invention, and variations in the system and other details will become apparent to those skilled in the art. It is intended that all such variations and modifications, which fall within the scope or spirit of the appended claims, be embraced thereby.

1. A system for storing one or more weight sets, the weight sets comprising adjustable weight dumbbells, fixed weight dumbbells, barbells, dumbbell bars, barbell bars, and adjustable weight discs, the weight set storage system comprising:

   a. a case, the case comprising a bottom and a lid, the lid pivotally connected to the bottom;
   b. the bottom comprising a bottom outer surface and a bottom inner surface, the bottom inner surface defining a plurality of bottom vertical slots, and
   c. the lid comprising a lid outer surface and a lid inner surface, the lid inner surface defining a plurality of lid vertical slots, each lid vertical slot aligned with a bottom vertical slot to form an enclosure, the enclosure configured to securely hold one or more discs in a vertical position when the case is in a closed position.

2. The weight set storage system of claim 1 wherein the case comprises an elastomeric material.

3. The weight set storage system of claim 1 wherein the outer surface of the case bottom comprises a ridge and the outer surface of the case lid defines a depression configured to receive the ridge so that a plurality of cases can be securely stacked.

4. The weight set storage system of claim 1 wherein the outer surface of the case lid defines a depression and the outer surface of the case bottom comprises a ridge configured to receive the depression so that a plurality of cases can be securely stacked.

5. The weight set storage system of claim 1 wherein the outer surface of the case bottom further comprises one or more protuberances and the outer surface of the case lid defines one or more recesses configured to receive the one or more protuberances so that a plurality of cases can be securely stacked.

6. The weight set storage system of claim 1 wherein the outer surface of the case lid defines one or more recesses and the outer surface of the case bottom comprises one or more protuberances configured to receive the one or more recess so that a plurality of cases can be securely stacked.

7. The weight set storage system of claim 1 wherein each lid vertical slot is symmetrical to a bottom vertical slot.

8. The weight set storage system of claim 1 wherein each bottom vertical slot and each lid vertical slot comprise a dimension that is configured to confine one or more discs within the lid vertical slot or the bottom vertical slot, when the case is in an open position.

9. The weight set storage system of claim 1 wherein the inner surface of the case bottom and the inner surface of the case lid further comprise one or more indentations, each indentation comprising a dimension that is slightly smaller than a dumbbell bar or a barbell bar so that the dumbbell bar or barbell bar can be snap locked in position within the indentation.

10. The weight set storage system of claim 1 wherein the outer surface of the case lid and the outer surface of the case bottom comprise clasping means to lock the case when the case is in a closed position.

11. The weight set storage system of claim 1 wherein the outer surface of the case lid and the outer surface of the case bottom define one or more symmetrical apertures, the apertures on the case lid in a corresponding position to the
12. A system for holding one or more weight sets, the weight sets comprising adjustable weight dumbbells, fixed weight dumbbells, barbells, dumbbell bars, barbell bars, and adjustable weight discs, the weight set holding system comprising:

- a case, the case comprising a bottom and a lid;
- the bottom comprising a bottom outer surface and a bottom inner surface, the bottom inner surface defining a plurality of bottom vertical slots wherein each bottom vertical slot is configured to securely hold one or more discs in a vertical position;
- the lid comprising a lid outer surface and a lid inner surface, the lid inner surface defining a plurality of lid vertical slots, each lid vertical slot configured to securely hold one or more discs in a vertical position, each lid vertical slot aligned to a bottom vertical slot, and each lid vertical slot and each bottom vertical slot comprising a dimension that is configured to confine one or more discs within the lid vertical slot or the bottom vertical slot when the disc is in a vertical position.

13. The weight set holding system of claim 12 wherein the case bottom and the case lid are hinged together so that the case can alternate between a closed position and an open position.

14. The weight set holding system of claim 12 wherein the case bottom and the case lid further comprise identical protrusions in corresponding positions, the protrusions configured so that the protrusion from the case bottom overlaps with the protrusion from the case lid to form a handle when the case is in a closed position.

15. The weight set holding system of claim 12 wherein the inner surface of the case bottom and the inner surface of the case lid further comprise one or more indentations, each indentation comprising a dimension that is slightly smaller than a dumbbell bar or a barbell bar so that the dumbbell bar or the barbell bar can be snap locked in position within the indentation.

16. A system for holding one or more weight sets, the weight sets comprising adjustable weight dumbbells, fixed weight dumbbells, barbells, dumbbell bars, barbell bars, and adjustable weight discs, the weight set holding system comprising:

- a case, the case comprising a bottom and a lid;
- the bottom comprising a bottom outer surface and a bottom inner surface, the bottom inner surface defining a plurality of bottom vertical slots wherein each bottom vertical slot is adapted to securely hold one or more discs in a vertical position;
- the lid comprising a lid outer surface and a lid inner surface, the lid inner surface defining a plurality of lid vertical slots, each lid vertical slot adapted to securely hold one or more discs in a vertical position, each lid vertical slot aligned to a bottom vertical slot;
- each lid vertical slot and each bottom vertical slot comprising a dimension that is configured to confine one or more discs within the lid vertical slot or the bottom vertical slot when the disc is in a vertical position, each lid vertical slot symmetrical to a bottom vertical slot, and the inner surface of the case bottom and the inner surface of the case lid comprising one or more indentations, each indentation comprising a dimension that is slightly smaller than a dumbbell bar so that the dumbbell bar can be snap locked in position within the indentation.

17. The weight set holding system of claim 16 wherein the outer surface of the case bottom comprises a ridge and one or more protuberances and the outer surface of the case lid defines a depression to receive the ridge and one or more recesses to receive the one or more protuberances so that a plurality of cases may be securely stacked.

18. A portable weight set kit comprising:

- one or more weight sets, the weight sets comprising adjustable weight dumbbells, fixed weight dumbbells, barbells, dumbbell bars, barbell bars, adjustable weight discs and combinations thereof;
- a case, the case comprising a bottom and a lid, the lid pivotally connected to the bottom;
- the bottom comprising a bottom outer surface and a bottom inner surface, the bottom inner surface defining a plurality of bottom vertical slots, and the lid comprising a lid outer surface and a lid inner surface, the lid inner surface defining a plurality of lid vertical slots, each lid vertical slot aligned with a bottom vertical slot to form an enclosure, the enclosure adapted to securely hold one or more discs in a vertical position when the case is in a closed position, and each lid vertical slot and each bottom vertical slot comprising a dimension that is configured to confine one or more discs within the lid vertical slot or the bottom vertical slot when the disc is in a vertical position.

19. The weight set kit of claim 18 wherein the inner surface of the case bottom and the inner surface of the case lid further comprise one or more indentations, each indentation comprising a dimension that is slightly smaller than a dumbbell bar or a barbell bar so that the dumbbell bar or the barbell bar can be snap locked in position within the indentation.

20. The weight set kit of claim 18 wherein the inner surface of the case bottom and the inner surface of the case lid further comprise one or more grooves, each groove configured to receive one or more locking collar.

21. The weight set kit of claim 18 wherein each lid vertical slot is symmetrical to a bottom vertical slot.

22. An weight set kit comprising:

- one or more weight sets, the weight sets comprising adjustable weight dumbbells, fixed weight dumbbells, barbells, dumbbell bars, barbell bars, adjustable weight discs and combinations thereof;
- a case, the case comprising a housing, the housing comprising a bottom and a lid, the lid pivotally connected to the bottom;
- the bottom comprising a bottom outer surface and a bottom inner surface, the bottom inner surface defining a plurality of bottom vertical slots, and the lid comprising a lid outer surface and a lid inner surface, the lid inner surface defining a plurality of lid vertical slots, each lid vertical slot aligned with a bottom vertical slot to form an enclosure, the enclosure adapted to securely hold one or more discs in a vertical position when the case is in a closed position, and each lid vertical slot and each bottom vertical slot comprising a dimension that is configured to confine one or more discs within the lid vertical slot or the bottom
vertical slot when the disc is in a vertical position, each lid vertical slot symmetrical to a bottom vertical slot, and the inner surface of the case bottom and the inner surface of the case lid comprising one or more indentations, each indentation comprising a dimension that is slightly smaller than a dumbbell bar so that the dumbbell bar can be snap locked in position within the indentation.

23. The weight set kit of claim 22 wherein the case further comprises four sides, two width sides and two length sides, one width side comprising two or more stabilizing projections for allowing the kit to stand upright.

24. The weight set kit of claim 22 wherein one length side comprises two or more balancing projections for allowing the kit to stand upright.

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