United States Patent Application Publication 20250263201
Kind Code A1
Publication Date August 21, 2025
Inventor(s) HUANG; Huaze

COLLAPSIBLE STORAGE BOX

Abstract

A collapsible storage box includes a box body having a containing space that is formed by joining four side retractable assemblies and at least one bottom retractable assembly. Each side retractable assembly includes a first side retractable plate assembly formed by two movable panels slidably sleeved with each other. A side edge of the bottom retractable assembly is hinged with a lower portion of one side retractable assembly. Two opposite side retractable assemblies of the four side retractable assemblies are combined to form a first fold-over unit, and the other two opposite side retractable assemblies are combined to form a second fold-over unit. The storage box is spatially adjustable in size and thus can be folded.

Inventors: **HUANG; Huaze (Fuzhou, CN)**

Applicant: **HUANG; Huaze** (Fuzhou, CN)

Family ID: **1000008586511**

Appl. No.: **18/994078**

Filed (or PCT Filed): **May 26, 2023**

PCT No.: **PCT/CN2023/096552**

Foreign Application Priority Data

CN 202211049290.X Aug. 30, 2022

Publication Classification

Int. Cl.: **B65D21/08** (20060101)

U.S. Cl.:

CPC **B65D21/086** (20130101);

Background/Summary

TECHNICAL FIELD

[0001] The present disclosure relates to the field of item storage equipment, and in particular, to a collapsible storage box.

BACKGROUND TECHNOLOGY

[0002] Storage boxes are commonly known as sorting chests, containers, sorting boxes, and containing boxes. The storage boxes may be made of a variety of materials, usually including plastics, fabrics, paper, metals, wood, etc.

[0003] In order to improve the applicability of storage boxes, certain improvements have been made to the storage boxes in the prior art such that various storage boxes are obtained with adjustable spatial storage sizes. In order to realize variable sizes, storage boxes of this type share a common point that areas are changed by sleeve connection and folding of panels on their sides. However, existing storage boxes of this type cannot be collapsible and thus may occupy large storage space when they are not used.

CONTENT OF THE INVENTION

[0004] In view of the technical problems in the prior art, an objective of the present disclosure is to provide a collapsible storage box that is spatially adjustable in size and thus can be folded.

[0005] In order to achieve the above objective, the present disclosure adopts a first technical solution as follows: a collapsible storage box includes a box body having a containing space that is formed by joining four side retractable assemblies and at least one bottom retractable assembly, where each side retractable assembly comprises a first side retractable plate assembly formed by two movable panels slidably sleeved with each other; a side edge of the bottom retractable assembly is hinged with a lower portion of one side retractable assembly; two opposite side retractable assemblies of the four side retractable assemblies are combined to form a first fold-over unit, and the other two opposite side retractable assemblies are combined to form a second fold-over unit; lower portions of the side retractable assemblies within the first fold-over unit are hinged with the bottom retractable assembly; the second fold-over unit further includes two vertical folding avoidance plates that are respectively disposed below the side retractable assemblies inside the second fold-over unit and configured to avoid thicknesses of the side retractable assemblies of the folded-over first fold-over unit after being folded; lower portions of the vertical folding avoidance plates are fixedly connected to the bottom retractable assembly, and upper portions of the vertical folding avoidance plates are hinged with the lower portions of the side retractable assemblies on the corresponding sides.

[0006] Further, each side retractable assembly further includes a second side retractable plate assembly formed by two movable panels slidably sleeved with each other; and the second side retractable plate assembly and the first side retractable plate assembly are slidably sleeved with each other.

[0007] Further, each bottom retractable assembly is formed by two first bottom retractable plate assemblies sleeved with each other; and the first bottom retractable plate assembly is formed by two movable panels slidably sleeved with each other.

[0008] Further, each bottom retractable assembly is formed by two second bottom retractable plate assemblies and a first bottom corrugated connecting retractable assembly connected between the two second bottom retractable plate assemblies; the second bottom retractable plate assembly is formed by two movable panels slidably sleeved with each other; the first bottom corrugated connecting retractable assembly is formed by a first bottom corrugated retractable plate and a second bottom corrugated retractable plate slidably sleeved with each other; respective extension-retraction directions of the first bottom corrugated retractable plate and the second bottom

corrugated retractable plate are perpendicular to a sliding direction of the first bottom corrugated retractable plate relative to the second bottom corrugated retractable plate; and an extension-retraction direction of the second bottom retractable plate assembly is identical to the sliding direction of the first bottom corrugated retractable plate relative to the second bottom corrugated retractable plate.

[0009] Further, each bottom retractable assembly is formed by two bottom retractable subassemblies and a second bottom corrugated connecting retractable assembly disposed between the two bottom retractable subassemblies; each bottom retractable subassembly includes two first bottom base plates disposed symmetrically and a third bottom corrugated retractable plate connected between the two first bottom base plates; the second bottom corrugated connecting retractable assembly is formed by a fourth bottom corrugated retractable plate and a fifth bottom corrugated retractable plate slidably sleeved with each other; two side edges of each of the fourth bottom corrugated retractable plate and the fifth bottom corrugated retractable plate are connected to side edges of the corresponding first bottom base plates, respectively; and respective extension-retraction directions of the fourth bottom corrugated retractable plate and the fifth bottom corrugated retractable plate are perpendicular to a sliding direction of the fourth bottom corrugated retractable plate relative to the fifth bottom corrugated retractable plate.

[0010] Further, each bottom retractable assembly is formed by a sixth bottom corrugated retractable plate and a seventh bottom corrugated retractable plate slidably sleeved with each other; and respective extension-retraction directions of the sixth bottom corrugated retractable plate and the seventh bottom corrugated retractable plate are perpendicular to a sliding direction of the sixth bottom corrugated retractable plate relative to the seventh bottom corrugated retractable plate.

[0011] Further, each bottom retractable assembly is formed by four second bottom base plates; and one side edge of each second bottom base plate is connected to a bottom of the side retractable assembly at a corresponding position in a flipping manner.

[0012] Further, a hinge assembly is further disposed at any position between adjacent two side retractable assemblies, between the lower portion of the side retractable assembly and the bottom retractable assembly, and between the upper portion of the vertical folding avoidance plate and the lower portion of the side retractable assembly on the corresponding side; the hinge assembly includes a first outer rotating plate, a second outer rotating plate, an arc-shaped elastic connector, a first inner rotating plate, and a second inner rotating plate; two open ends of the arc-shaped elastic connector are integrally connected to the first outer rotating plate and the second outer rotating plate, respectively; the first inner rotating plate is hinged with the second inner rotating plate; the first inner rotating plate is correspondingly disposed on an inner side of the first outer rotating plate; a first slide rail is disposed on one side and between the first inner rotating plate and the first outer rotating plate, and a first slider matched with the first slide rail is disposed on the other side; an extension direction of the first slide rail is perpendicular to a rotation direction of the first inner rotating plate; the second inner rotating plate is correspondingly disposed on an inner side of the second outer rotating plate; a second slide rail is disposed on one side and between the second inner rotating plate and the second outer rotating plate, and a second slider matched with the second slide rail is disposed on the other side; and an extension direction of the second slide rail is perpendicular to a rotation direction of the second inner rotating plate.

[0013] In order to achieve the above objective as well, the present disclosure may also adopt a second technical solution in a different folding manner as follows: a collapsible storage box includes a box body having a containing space that is formed by joining four side retractable assemblies and at least one bottom retractable assembly, where each side retractable assembly includes a first side retractable plate assembly formed by two movable panels slidably sleeved with each other; two opposite side retractable assemblies of the four side retractable assemblies are combined to form a flipping unit, and the other two opposite side retractable assemblies are combined to form an infolding unit; the flipping unit further includes a flipping cross beam

disposed above the side retractable assembly, and an upper portion of the side retractable assembly is rotatably connected to the flipping cross beam; two ends of the flipping cross beam are fixedly connected to the side retractable assemblies on the two corresponding sides within the infolding unit; each of the side retractable assemblies within the infolding unit is formed by an upper infolding subunit and a lower infolding subunit with an upper portion hinged with the upper infolding subunit; and a lower portion of the lower infolding subunit is hinged with the bottom retractable assembly.

[0014] In order to achieve the above objective as well, the present disclosure may also adopt a third technical solution in a different folding manner as follows: a collapsible storage box includes a box body having a containing space that is formed by joining four side retractable assemblies and at least one bottom retractable assembly, where each side retractable assembly includes a first side retractable plate assembly formed by two movable panels slidably sleeved with each other; a side edge of the bottom retractable assembly is hinged with a lower portion of one side retractable assembly; or the bottom retractable assembly is formed by joining two pieces; two opposite side edges of the bottom retractable assembly are hinged with lower portions of two corresponding side retractable assemblies; adjacent two side retractable assemblies of the four side retractable assemblies are combined in pair to form two folding units; a transverse folding avoidance plate configured to avoid thicknesses of the side retractable assemblies after being folded is disposed between the two side retractable assemblies inside each folding unit; and one side edge of the transverse folding avoidance plate is fixedly connected to one side retractable assembly, while the other side edge is hinged with the other side retractable assembly.

[0015] To sum up, the present disclosure has the following advantages: [0016] 1. The main body of the present disclosure is formed by a side retractable frame and a bottom retractable frame. Since each of the side retractable frame and the bottom retractable frame can be retracted and extended in at least one direction, the formed box shape can be changed by retraction and extension in at least two directions such that the containing space inside the box body is expanded or narrowed to adapt to the sizes of various objects. Meanwhile, with the folding unit, folding can be realized at the same time of retraction and extension, and space can be saved when the storage box is not used. [0017] 2. In the present disclosure, a special “joint” structure is further designed for the hinge joint of stacked thick panels after folding to allow for better folding.

Description

DESCRIPTION OF THE DRAWINGS

[0018] FIG. **1** is a structural schematic diagram I of Embodiment 1.1 of the present disclosure in a folded state;

[0019] FIG. **2** is a structural schematic diagram II of Embodiment 1.1 of the present disclosure in the folded state;

[0020] FIG. **3** is a structural schematic diagram III of Embodiment 1.1 of the present disclosure in the folded state;

[0021] FIG. **4** is a structural schematic diagram IV of Embodiment 1.1 of the present disclosure in the folded state;

[0022] FIG. **5** is a structural schematic diagram I of Embodiment 1.2 of the present disclosure in a folded state;

[0023] FIG. **6** is a structural schematic diagram II of Embodiment 1.2 of the present disclosure in the folded state;

[0024] FIG. **7** is a structural schematic diagram III of Embodiment 1.2 of the present disclosure in the folded state;

[0025] FIG. **8** is a structural schematic diagram IV of Embodiment 1.2 of the present disclosure in

the folded state;
[0026] FIG. **9** is a three-dimensional structural schematic diagram I of Embodiment 2 of the present disclosure;
[0027] FIG. **10** is a three-dimensional structural schematic diagram II of Embodiment 2 of the present disclosure;
[0028] FIG. **11** is a three-dimensional structural schematic diagram I of Embodiment 3 of the present disclosure;
[0029] FIG. **12** is a three-dimensional structural schematic diagram II of Embodiment 3 of the present disclosure;
[0030] FIG. **13** is a three-dimensional structural schematic diagram I of Embodiment 4 of the present disclosure;
[0031] FIG. **14** is a three-dimensional structural schematic diagram II of Embodiment 4 of the present disclosure;
[0032] FIG. **15** is a three-dimensional structural schematic diagram of Embodiment 5 of the present disclosure when the bottom is closed;
[0033] FIG. **16** is a three-dimensional structural schematic diagram of Embodiment 5 of the present disclosure when the bottom is opened;
[0034] FIG. **17** is a three-dimensional structural schematic diagram of Embodiment 6 of the present disclosure;
[0035] FIG. **18** is a three-dimensional structural schematic diagram I of a hinge assembly of Embodiment 6 of the present disclosure;
[0036] FIG. **19** is a three-dimensional structural schematic diagram II of the hinge assembly of Embodiment 6 of the present disclosure;
[0037] FIG. **20** is a three-dimensional structural schematic diagram III of the hinge assembly of Embodiment 6 of the present disclosure;
[0038] FIG. **21** is a structural schematic diagram I of Embodiment 7.1 of the present disclosure in a folded state;
[0039] FIG. **22** is a structural schematic diagram II of Embodiment 7.1 of the present disclosure in the folded state;
[0040] FIG. **23** is a structural schematic diagram III of Embodiment 7.1 of the present disclosure in the folded state;
[0041] FIG. **24** is a structural schematic diagram IV of Embodiment 7.1 of the present disclosure in the folded state;
[0042] FIG. **25** is a structural schematic diagram I of Embodiment 7.2 of the present disclosure in a folded state;
[0043] FIG. **26** is a structural schematic diagram II of Embodiment 7.2 of the present disclosure in the folded state;
[0044] FIG. **27** is a structural schematic diagram III of Embodiment 7.2 of the present disclosure in the folded state;
[0045] FIG. **28** is a structural schematic diagram IV of Embodiment 7.2 of the present disclosure in the folded state;
[0046] FIG. **29** is a structural schematic diagram I of Embodiment 8.1 of the present disclosure in a folded state;
[0047] FIG. **30** is a structural schematic diagram II of Embodiment 8.1 of the present disclosure in the folded state;
[0048] FIG. **31** is a structural schematic diagram III of Embodiment 8.1 of the present disclosure in the folded state;
[0049] FIG. **32** is a structural schematic diagram IV of Embodiment 8.1 of the present disclosure in the folded state;
[0050] FIG. **33** is a structural schematic diagram I of Embodiment 8.2 of the present disclosure in a

folded state;
[0051] FIG. **34** is a structural schematic diagram II of Embodiment 8.2 of the present disclosure in the folded state;
[0052] FIG. **35** is a structural schematic diagram III of Embodiment 8.2 of the present disclosure in the folded state;
[0053] FIG. **36** is a structural schematic diagram IV of Embodiment 8.2 of the present disclosure in the folded state; and
[0054] FIG. **37** is a structural schematic diagram I of Embodiment 9 of the present disclosure in a folded state.

List of Reference Numerals

[0055] **1-1**—first side retractable plate assembly, **1-2**—second side retractable plate assembly; [0056] **2-1**—first bottom retractable plate assembly; [0057] **2-21**—second bottom retractable plate assembly, **2-22**—first bottom corrugated retractable plate, **2-23**—second bottom corrugated retractable plate; [0058] **2-31**—first bottom base plate, **2-32**—third bottom corrugated retractable plate, **2-33**—fourth bottom corrugated retractable plate, **2-34**—fifth bottom corrugated retractable plate; [0059] **2-41**—sixth bottom corrugated retractable plate, **2-42**—seventh bottom corrugated retractable plate; [0060] **2-51**—second bottom base plate; [0061] **3-11**—first fold-over unit, **3-12**—second fold-over unit, **3-121**—vertical folding avoidance plate; [0062] **3-21**—flipping unit, **3-211**—flipping cross beam, **3-22**—infolding unit, **3-221**—upper infolding subunit, **3-222**—lower infolding subunit; [0063] **3-31**—folding unit, **3-311**—transverse folding avoidance plate; [0064] **4-1**—first outer rotating plate, **4-2**—second outer rotating plate, **4-3**—arc-shaped elastic connector, **4-4**—first inner rotating plate, **4-5**—second inner rotating plate, **4-61**—first slide rail, **4-62**—first slider, **4-71**—second slide rail, and **4-72**—second slider.

SPECIFIC IMPLEMENTATIONS

[0065] The present disclosure will be further described in detail below.

Embodiment 1.1

[0066] As shown in FIGS. **1-4**, a collapsible storage box of the present disclosure includes a box body having a containing space that is formed by joining four side retractable assemblies and at least one bottom retractable assembly.
[0067] Each side retractable assembly includes first side retractable plate assembly **1-1** formed by two movable panels slidably sleeved with each other.
[0068] Each bottom retractable assembly is formed by two first bottom retractable plate assemblies **2-1** sleeved with each other.
[0069] A side edge of the bottom retractable assembly is hinged with a lower portion of one side retractable assembly.
[0070] Two opposite side retractable assemblies of the four side retractable assemblies are combined to form first fold-over unit **3-11**, and the other two opposite side retractable assemblies are combined to form second fold-over unit **3-12**.
[0071] Lower portions of the side retractable assemblies within the first fold-over unit **3-11** are hinged with the bottom retractable assembly; the second fold-over unit **3-12** further includes two vertical folding avoidance plates **3-121** that are respectively disposed below the side retractable assemblies inside the second fold-over unit **3-12** and configured to avoid thicknesses of the side retractable assemblies after being folded; lower portions of the vertical folding avoidance plates **3-121** are fixedly connected to the bottom retractable assembly, and upper portions of the vertical folding avoidance plates **3-121** are hinged with the lower portions of the side retractable assemblies on the corresponding sides.
[0072] The above embodiment discloses the solution of the collapsible storage box that can be retracted and extended in length and width.

Embodiment 1.2

[0073] As shown in FIGS. **5-8**, another collapsible storage box solution is disclosed in another

similar embodiment. In this solution, retraction and extension can be realized in length, width, and height directions, with specific differences from the above embodiment as follows:

[0074] Each side retractable assembly further includes second side retractable plate assembly **1-2** formed by two movable panels slidably sleeved with each other; and the second side retractable plate assembly **1-2** and the first side retractable plate assembly **1-1** are slidably sleeved with each other.

Embodiment 2

[0075] As shown in FIGS. **9-10**, this embodiment differs from Embodiment 1 in that: each bottom retractable assembly is formed by two second bottom retractable plate assemblies **2-21** and a first bottom corrugated connecting retractable assembly disposed between the two second bottom retractable plate assemblies **2-21**; the first bottom corrugated connecting retractable assembly is formed by first bottom corrugated retractable plate **2-22** and second bottom corrugated retractable plate **2-23** slidably sleeved with each other; respective extension-retraction directions of the first bottom corrugated retractable plate **2-22** and the second bottom corrugated retractable plate **2-23** are perpendicular to a sliding direction of the first bottom corrugated retractable plate **2-22** relative to the second bottom corrugated retractable plate **2-23**; and an extension-retraction direction of the second bottom retractable plate assembly **2-21** is identical to the sliding direction of the first bottom corrugated retractable plate **2-22** relative to the second bottom corrugated retractable plate **2-23** inside the first bottom corrugated connecting retractable assembly.

Embodiment 3

[0076] As shown in FIGS. **11-12**, this embodiment differs from Embodiment 1 in that: each bottom retractable assembly is formed by two bottom retractable subassemblies and a second bottom corrugated connecting retractable assembly disposed between the two bottom retractable subassemblies; each bottom retractable subassembly includes two first bottom base plates **2-31** disposed symmetrically and third bottom corrugated retractable plate **2-32** connected between the two first bottom base plates **2-31**; the second bottom corrugated connecting retractable assembly is formed by fourth bottom corrugated retractable plate **2-33** and fifth bottom corrugated retractable plate **2-34** slidably sleeved with each other; and respective extension-retraction directions of the fourth bottom corrugated retractable plate **2-33** and the fifth bottom corrugated retractable plate **2-34** are perpendicular to a sliding direction of the fourth bottom corrugated retractable plate **2-33** relative to the fifth bottom corrugated retractable plate **2-34**.

Embodiment 4

[0077] As shown in FIGS. **13-14**, this embodiment differs from Embodiment 1 in that: each bottom retractable assembly is formed by sixth bottom corrugated retractable plate **2-41** and seventh bottom corrugated retractable plate **2-42** slidably sleeved with each other; and respective extension-retraction directions of the sixth bottom corrugated retractable plate **2-41** and the seventh bottom corrugated retractable plate **2-42** are perpendicular to a sliding direction of the sixth bottom corrugated retractable plate **2-41** relative to the seventh bottom corrugated retractable plate **2-42**.

[0078] In addition, it needs to be noted in the manufacturing process that: the sixth bottom corrugated retractable plate **2-41** is on an outer side and the seventh bottom corrugated retractable plate **2-42** is on an inner side, with a relative height difference therebetween. The first side retractable plate assembly **1-1** and the second side retractable plate assembly **1-2** are sleeved with each other such that there is obviously a relative height difference therebetween. In order to prevent interference, it needs to be noted that the first side retractable plate assembly **1-1** on the outer side and the sixth bottom corrugated retractable plate **2-41** also on the outer side are fixed at edges, and the seventh bottom corrugated retractable plate **2-42** on the inner side and the second side retractable plate assembly **1-2** also on the inner side are fixed at edges.

Embodiment 5

[0079] As shown in FIGS. **15-16**, this embodiment differs from Embodiment 1 in that: each bottom retractable assembly is formed by four second bottom base plates **2-51**; and one side edge of each

second bottom base plate (**2-51**) is connected to a bottom of the side retractable assembly at a corresponding position in a flipping manner.

Embodiment 6

[0080] As shown in FIGS. **17-20**, this embodiment differs from Embodiment 1 in that: hinge assemblies are disposed between the lower portion of the side retractable assembly and the bottom retractable assembly, and between the upper portion of the vertical folding avoidance plate **3-121** and the lower portion of the side retractable assembly on the corresponding side; the hinge assembly includes first outer rotating plate **4-1**, second outer rotating plate **4-2**, arc-shaped elastic connector **4-3**, first inner rotating plate **4-4**, and second inner rotating plate **4-5**; [0081] two open ends of the arc-shaped elastic connector **4-3** are integrally connected to the first outer rotating plate **4-1** and the second outer rotating plate **4-2**, respectively; the first inner rotating plate **4-4** is hinged with the second inner rotating plate **4-5**; [0082] the first inner rotating plate **4-4** is correspondingly disposed on an inner side of the first outer rotating plate **4-1**; first slide rail **4-61** is disposed on one side and between the first inner rotating plate **4-4** and the first outer rotating plate **4-1**, and first slider **4-62** matched with the first slide rail **4-61** is disposed on the other side; an extension direction of the first slide rail **4-61** is perpendicular to a rotation direction of the first inner rotating plate **4-4**; [0083] the second inner rotating plate **4-5** is correspondingly disposed on an inner side of the second outer rotating plate **4-2**; second slide rail **4-71** is disposed on one side and between the second inner rotating plate **4-5** and the second outer rotating plate **4-2**, and second slider **4-72** matched with the second slide rail **4-71** is disposed on the other side; and an extension direction of the second slide rail **4-71** is perpendicular to a rotation direction of the second inner rotating plate **4-5**.

[0084] In this embodiment, one of the first outer rotating plate **4-1** or the second outer rotating plate **4-2** is integrally connected to the first side retractable plate assembly **1-1** on the outer side, while the other one is integrally connected to the corresponding outer side structure of the substrate. Correspondingly, one of the first inner rotating plate **4-4** or the second inner rotating plate **4-5** is integrally connected to the second side retractable plate assembly **1-2** on the inner side, while the other one is integrally connected to the corresponding inner side structure of the substrate.

[0085] Here, in an unfolded state, the first slide rail **4-61** and the second slide rail **4-71** may allow the corresponding rotating plates to slide for retraction and extension. When folding, since the extension direction is perpendicular to the rotation direction, limiting is achieved. Therefore, there is no relative displacement between two corresponding rotating plates in the folding process, and the stability of the folding structure is greatly improved.

Embodiment 7.1

[0086] As shown in FIGS. **21-24**, this embodiment discloses a collapsible storage box of another folding structure for storage and transportation in a non-use state: it includes a box body having a containing space that is formed by joining four side retractable assemblies and at least one bottom retractable assembly.

[0087] Each side retractable assembly is formed by two first side retractable plate assemblies **1-1** slidably sleeved with each other.

[0088] A side edge of the bottom retractable assembly is hinged with a lower portion of one side retractable assembly.

[0089] Two opposite side retractable assemblies of the four side retractable assemblies are combined to form flipping unit **3-21**, and the other two opposite side retractable assemblies are combined to form infolding unit **3-22**.

[0090] The flipping unit **3-21** further includes flipping cross beam **3-211** disposed above the side retractable assembly, and an upper portion of the side retractable assembly is rotatably connected to the flipping cross beam **3-211**. Two ends of the flipping cross beam **3-211** are fixedly connected to the side retractable assemblies on the two corresponding sides within the infolding unit **3-22**.

[0091] Each of the side retractable assemblies within the infolding unit **3-22** is formed by upper infolding subunit **3-221** and lower infolding subunit **3-222** with an upper portion hinged with the upper infolding subunit **3-221**; and a lower portion of the lower infolding subunit **3-222** is hinged with the bottom retractable assembly.

[0092] Moreover, in this embodiment, it further needs to be noted that in order to guarantee that the upper infolding subunit **3-221** and the lower infolding subunit **3-222** can be folded while sliding normally, the middle breakage positions of the vertical guide rails between them need to be foldable to achieve the above function.

Embodiment 7.2

[0093] As shown in FIGS. **25-28**, another collapsible storage box solution is disclosed in another similar embodiment. In this solution, retraction and extension can be realized in length, width, and height directions, with specific differences from the above embodiment as follows:

[0094] Each side retractable assembly further includes second side retractable plate assembly **1-2** formed by two movable panels slidably sleeved with each other; and the second side retractable plate assembly **1-2** and the first side retractable plate assembly **1-1** are slidably sleeved with each other.

Embodiment 8.1

[0095] As shown in FIGS. **29-32**, this embodiment discloses a collapsible storage box of another folding structure for storage and transportation in a non-use state: it includes a box body having a containing space that is formed by joining four side retractable assemblies and at least one bottom retractable assembly.

[0096] Each side retractable assembly includes first side retractable plate assembly **1-1** formed by two movable panels slidably sleeved with each other.

[0097] A side edge of the bottom retractable assembly is hinged with a lower portion of one side retractable assembly.

[0098] Adjacent two side retractable assemblies of the four side retractable assemblies are combined in pair to form two folding units **3-31**; transverse folding avoidance plate **3-311** configured to avoid thicknesses of the side retractable assemblies after being folded is disposed between the two side retractable assemblies inside each folding unit **3-31**; and one side edge of the transverse folding avoidance plate **3-311** is fixedly connected to one side retractable assembly, while the other side edge is hinged with the other side retractable assembly.

Embodiment 8.2

[0099] As shown in FIGS. **33-36**, another collapsible storage box solution is disclosed in another similar embodiment. In this solution, retraction and extension can be realized in length, width, and height directions, with specific differences from the above embodiment as follows:

[0100] Each side retractable assembly further includes second side retractable plate assembly **1-2** formed by two movable panels slidably sleeved with each other; and the second side retractable plate assembly **1-2** and the first side retractable plate assembly **1-1** are slidably sleeved with each other.

Embodiment 9

[0101] With reference to FIG. **37**, the difference from Embodiment 8 is as follows: the bottom retractable assembly is designed into a two-side flipping structure in this embodiment to facilitate opening and folding.

[0102] In the present disclosure, the advantages of the hinge assembly (**4**) are as follows. The first slide rail (**4-61**) and the first slider (**4-62**), as well as the second slide rail (**4-71**), and the second slider (**4-72**), form a sliding structure. In both folded and unfolded states, the first outer rotating plate (**4-1**) and the second outer rotating plate (**4-2**), as well as the first inner rotating plate (**4-4**) and the second inner rotating plate (**4-5**), can be freely slidably retracted and extended. The first slide rail (**4-61**) and the second slide rail (**4-71**) play a limiting role. The displacement that may occur during the folding process between the inner and outer plates is adjusted through the arc-

shaped elastic connector (**4-3**) to ensure that their folding direction is always perpendicular to the sliding direction. The design greatly improves the stability of the folding structure between the side wall and the bottom plate, as well as between the side walls. In addition, the edge positions of the inner and outer plates between the side wall and the bottom plate, as well as between the side walls, can be aligned at any time without interference in the folded or unfolded state. Thus, each side wall and the bottom plate can be smoothly pushed and pulled to achieve retraction and extension in the folded or unfolded state. Meanwhile, in order to smoothly achieve the purpose of retraction and extension, when the edge positions of the inner and outer plates between each side wall and the bottom plate, as well as between the side walls, are hinged, the best connection method is to provide a hinge structure between the mutually close inner plates, as well as between the mutually close outer plates.

[0103] In the description of the present disclosure, the term “hinge” is only intended to describe the connection relationship between components. Therefore, features defined by “hinge” can explicitly or implicitly include various implementations such as fold hinge, butt hinge, and link hinge.

[0104] Moreover, it further needs to be noted that the structure with a wavy cross section is illustrated in the drawings corresponding to the corrugated retractable plates mentioned in the embodiments, and it would be easy for those skilled in the art to conceive of modifying the wavy shape to square, V-shape, trapezoid, or a combination thereof, which should all be included within the protection scope of the present disclosure.

[0105] The above embodiments are preferred embodiments of the present disclosure. However, the embodiments of the present disclosure are not limited to the above embodiments, and any other changes, modifications, replacements, combinations, and simplifications made without departing from the spirit and principles of the present disclosure should be equivalent substitutions and shall be included within the protection scope of the present disclosure. In addition, for various retractable structures adopted in the present disclosure, those skilled in the art should be able to understand that suitable dampings should be disposed therebetween so that two retractable assemblies can slide toward each other and a certain frictional force can be maintained to form a locking effect, thereby maintaining a certain spatial shape and size of the box body.

Claims

1. A collapsible storage box, comprising a box body having a containing space that is formed by joining four side retractable assemblies and at least one bottom retractable assembly, wherein each side retractable assembly comprises a first side retractable plate assembly formed by two movable panels slidably sleeved with each other; a side edge of the bottom retractable assembly is hinged with a lower portion of one side retractable assembly; two opposite side retractable assemblies of the four side retractable assemblies are combined to form a first fold-over unit, and the other two opposite side retractable assemblies are combined to form a second fold-over unit; lower portions of the side retractable assemblies within the first fold-over unit are hinged with the bottom retractable assembly; the second fold-over unit further comprises two vertical folding avoidance plates that are respectively disposed below the side retractable assemblies inside the second fold-over unit and configured to avoid thicknesses of the side retractable assemblies of the folded-over first fold-over unit after being folded; lower portions of the vertical folding avoidance plates are fixedly connected to the bottom retractable assembly, and upper portions of the vertical folding avoidance plates are hinged with the lower portions of the side retractable assemblies on the corresponding sides.

2. The collapsible storage box according to claim 1, wherein each side retractable assembly further comprises a second side retractable plate assembly formed by two movable panels slidably sleeved with each other; and the second side retractable plate assembly and the first side retractable plate assembly are slidably sleeved with each other.

3. The collapsible storage box according to claim 1, wherein each bottom retractable assembly is formed by two first bottom retractable plate assemblies sleeved with each other; and the first bottom retractable plate assembly is formed by two movable panels slidably sleeved with each other.

4. The collapsible storage box according to claim 1, wherein each bottom retractable assembly is formed by two second bottom retractable plate assemblies and a first bottom corrugated connecting retractable assembly connected between the two second bottom retractable plate assemblies; the second bottom retractable plate assembly is formed by two movable panels slidably sleeved with each other; the first bottom corrugated connecting retractable assembly is formed by a first bottom corrugated retractable plate and a second bottom corrugated retractable plate slidably sleeved with each other; respective extension-retraction directions of the first bottom corrugated retractable plate and the second bottom corrugated retractable plate are perpendicular to a sliding direction of the first bottom corrugated retractable plate relative to the second bottom corrugated retractable plate; and an extension-retraction direction of the second bottom retractable plate assembly is identical to the sliding direction of the first bottom corrugated retractable plate relative to the second bottom corrugated retractable plate.

5. The collapsible storage box according to claim 1, wherein each bottom retractable assembly is formed by two bottom retractable subassemblies and a second bottom corrugated connecting retractable assembly disposed between the two bottom retractable subassemblies; each bottom retractable subassembly comprises two first bottom base plates disposed symmetrically and a third bottom corrugated retractable plate connected between the two first bottom base plates; the second bottom corrugated connecting retractable assembly is formed by a fourth bottom corrugated retractable plate and a fifth bottom corrugated retractable plate slidably sleeved with each other; two side edges of each of the fourth bottom corrugated retractable plate and the fifth bottom corrugated retractable plate are connected to side edges of the corresponding first bottom base plates, respectively; and respective extension-retraction directions of the fourth bottom corrugated retractable plate and the fifth bottom corrugated retractable plate are perpendicular to a sliding direction of the fourth bottom corrugated retractable plate relative to the fifth bottom corrugated retractable plate.

6. The collapsible storage box according to claim 1, wherein each bottom retractable assembly is formed by a sixth bottom corrugated retractable plate and a seventh bottom corrugated retractable plate slidably sleeved with each other; and respective extension-retraction directions of the sixth bottom corrugated retractable plate and the seventh bottom corrugated retractable plate are perpendicular to a sliding direction of the sixth bottom corrugated retractable plate relative to the seventh bottom corrugated retractable plate.

7. The collapsible storage box according to claim 1, wherein each bottom retractable assembly is formed by four second bottom base plates; and one side edge of each second bottom base plate is connected to a bottom of the side retractable assembly at a corresponding position in a flipping manner.

8. The collapsible storage box according to claim 1, wherein a hinge assembly is further disposed at any position between adjacent two side retractable assemblies, between the lower portion of the side retractable assembly and the bottom retractable assembly, and between the upper portion of the vertical folding avoidance plate and the lower portion of the side retractable assembly on the corresponding side; the hinge assembly comprises a first outer rotating plate, a second outer rotating plate, an arc-shaped elastic connector, a first inner rotating plate, and a second inner rotating plate; two open ends of the arc-shaped elastic connector are integrally connected to the first outer rotating plate and the second outer rotating plate, respectively; the first inner rotating plate is hinged with the second inner rotating plate; the first inner rotating plate is correspondingly disposed on an inner side of the first outer rotating plate; a first slide rail is disposed on one side and between the first inner rotating plate and the first outer rotating plate, and a first slider matched

with the first slide rail is disposed on the other side; an extension direction of the first slide rail is perpendicular to a rotation direction of the first inner rotating plate; the second inner rotating plate is correspondingly disposed on an inner side of the second outer rotating plate; a second slide rail is disposed on one side and between the second inner rotating plate and the second outer rotating plate, and a second slider matched with the second slide rail is disposed on the other side; and an extension direction of the second slide rail is perpendicular to a rotation direction of the second inner rotating plate.

9. A collapsible storage box, comprising a box body having a containing space that is formed by joining four side retractable assemblies and at least one bottom retractable assembly, wherein each side retractable assembly comprises a first side retractable plate assembly formed by two movable panels slidably sleeved with each other; two opposite side retractable assemblies of the four side retractable assemblies are combined to form a flipping unit, and the other two opposite side retractable assemblies are combined to form an infolding unit; the flipping unit further comprises a flipping cross beam disposed above the side retractable assembly, and an upper portion of the side retractable assembly is rotatably connected to the flipping cross beam; two ends of the flipping cross beam are fixedly connected to the side retractable assemblies on the two corresponding sides within the infolding unit; each of the side retractable assemblies within the infolding unit is formed by an upper infolding subunit and a lower infolding subunit with an upper portion hinged with the upper infolding subunit; and a lower portion of the lower infolding subunit **2** hinged with the bottom retractable assembly.

10. The collapsible storage box according to claim 9, wherein each side retractable assembly further comprises a second side retractable plate assembly formed by two movable panels slidably sleeved with each other; and the second side retractable plate assembly and the first side retractable plate assembly are slidably sleeved with each other.

11. The collapsible storage box according to claim 9, wherein each bottom retractable assembly is formed by two first bottom retractable plate assemblies sleeved with each other; and the first bottom retractable plate assembly is formed by two movable panels slidably sleeved with each other.

12. The collapsible storage box according to claim 9, wherein each bottom retractable assembly is formed by two second bottom retractable plate assemblies and a first bottom corrugated connecting retractable assembly disposed between the two second bottom retractable plate assemblies; the second bottom retractable plate assembly is formed by two movable panels slidably sleeved with each other; the first bottom corrugated connecting retractable assembly is formed by a first bottom corrugated retractable plate and a second bottom corrugated retractable plate slidably sleeved with each other; respective extension-retraction directions of the first bottom corrugated retractable plate and the second bottom corrugated retractable plate are perpendicular to a sliding direction of the first bottom corrugated retractable plate relative to the second bottom corrugated retractable plate; and an extension-retraction direction of the second bottom retractable plate assembly is identical to the sliding direction of the first bottom corrugated retractable plate relative to the second bottom corrugated retractable plate.

13. The collapsible storage box according to claim 9, wherein each bottom retractable assembly is formed by two bottom retractable subassemblies and a second bottom corrugated connecting retractable assembly disposed between the two bottom retractable subassemblies; each bottom retractable subassembly comprises two first bottom base plates disposed symmetrically and a third bottom corrugated retractable plate connected between the two first bottom base plates; the second bottom corrugated connecting retractable assembly is formed by a fourth bottom corrugated retractable plate and a fifth bottom corrugated retractable plate slidably sleeved with each other; two side edges of each of the fourth bottom corrugated retractable plate and the fifth bottom corrugated retractable plate are connected to side edges of the corresponding first bottom base plates, respectively; and respective extension-retraction directions of the fourth bottom corrugated

retractable plate and the fifth bottom corrugated retractable plate are perpendicular to a sliding direction of the fourth bottom corrugated retractable plate relative to the fifth bottom corrugated retractable plate.

14. The collapsible storage box according to claim 9, wherein each bottom retractable assembly is formed by a sixth bottom corrugated retractable plate and a seventh bottom corrugated retractable plate slidably sleeved with each other; and respective extension-retraction directions of the sixth bottom corrugated retractable plate and the seventh bottom corrugated retractable plate are perpendicular to a sliding direction of the sixth bottom corrugated retractable plate relative to the seventh bottom corrugated retractable plate.

15. The collapsible storage box according to claim 9, wherein each bottom retractable assembly is formed by four second bottom base plates; and one side edge of each second bottom base plate is connected to a bottom of the side retractable assembly at a corresponding position in a flipping manner.

16. The collapsible storage box according to claim 9, wherein a side edge of the bottom retractable assembly is hinged with a lower portion of one side retractable assembly through a hinge assembly; the hinge assembly comprises a first outer rotating plate, a second outer rotating plate, an arc-shaped elastic connector, a first inner rotating plate, and a second inner rotating plate; two open ends of the arc-shaped elastic connector are integrally connected to the first outer rotating plate and the second outer rotating plate, respectively; the first inner rotating plate is hinged with the second inner rotating plate; the first inner rotating plate is correspondingly disposed on an inner side of the first outer rotating plate; a first slide rail is disposed on one side and between the first inner rotating plate and the first outer rotating plate, and a first slider matched with the first slide rail is disposed on the other side; an extension direction of the first slide rail is perpendicular to a rotation direction of the first inner rotating plate; the second inner rotating plate is correspondingly disposed on an inner side of the second outer rotating plate; a second slide rail is disposed on one side and between the second inner rotating plate and the second outer rotating plate, and a second slider matched with the second slide rail is disposed on the other side; and an extension direction of the second slide rail is perpendicular to a rotation direction of the second inner rotating plate.

17. A collapsible storage box, comprising a box body having a containing space that is formed by joining four side retractable assemblies and at least one bottom retractable assembly, wherein each side retractable assembly comprises a first side retractable plate assembly formed by two movable panels slidably sleeved with each other; a side edge of the bottom retractable assembly is hinged with a lower portion of one side retractable assembly; or the bottom retractable assembly is formed by joining two pieces; two opposite side edges of the bottom retractable assembly are hinged with lower portions of two corresponding side retractable assemblies; adjacent two side retractable assemblies of the four side retractable assemblies are combined in pair to form two folding units; a transverse folding avoidance plate configured to avoid thicknesses of the side retractable assemblies after being folded is disposed between the two side retractable assemblies inside each folding unit; and one side edge of the transverse folding avoidance plate is fixedly connected to one side retractable assembly, while the other side edge is hinged with the other side retractable assembly.

18. The collapsible storage box according to claim 17, wherein each side retractable assembly further comprises a second side retractable plate assembly formed by two movable panels slidably sleeved with each other; and the second side retractable plate assembly and the first side retractable plate assembly are slidably sleeved with each other.

19. The collapsible storage box according to claim 17, wherein each bottom retractable assembly is formed by two first bottom retractable plate assemblies sleeved with each other; and the first bottom retractable plate assembly is formed by two movable panels slidably sleeved with each other.

20. The collapsible storage box according to claim 17, wherein each bottom retractable assembly is

formed by two second bottom retractable plate assemblies and a first bottom corrugated connecting retractable assembly disposed between the two second bottom retractable plate assemblies; the second bottom retractable plate assembly is formed by two movable panels slidably sleeved with each other; the first bottom corrugated connecting retractable assembly is formed by a first bottom corrugated retractable plate and a second bottom corrugated retractable plate slidably sleeved with each other; respective extension-retraction directions of the first bottom corrugated retractable plate and the second bottom corrugated retractable plate are perpendicular to a sliding direction of the first bottom corrugated retractable plate relative to the second bottom corrugated retractable plate; and an extension-retraction direction of the second bottom retractable plate assembly is identical to the sliding direction of the first bottom corrugated retractable plate relative to the second bottom corrugated retractable plate.

21. The collapsible storage box according to claim 17, wherein each bottom retractable assembly is formed by two bottom retractable subassemblies and a second bottom corrugated connecting retractable assembly disposed between the two bottom retractable subassemblies; each bottom retractable subassembly comprises two first bottom base plates disposed symmetrically and a third bottom corrugated retractable plate connected between the two first bottom base plates; the second bottom corrugated connecting retractable assembly is formed by a fourth bottom corrugated retractable plate and a fifth bottom corrugated retractable plate slidably sleeved with each other; two side edges of each of the fourth bottom corrugated retractable plate and the fifth bottom corrugated retractable plate are connected to side edges of the corresponding first bottom base plates, respectively; and respective extension-retraction directions of the fourth bottom corrugated retractable plate and the fifth bottom corrugated retractable plate are perpendicular to a sliding direction of the fourth bottom corrugated retractable plate relative to the fifth bottom corrugated retractable plate.

22. The collapsible storage box according to claim 17, wherein each bottom retractable assembly is formed by a sixth bottom corrugated retractable plate and a seventh bottom corrugated retractable plate slidably sleeved with each other; and respective extension-retraction directions of the sixth bottom corrugated retractable plate and the seventh bottom corrugated retractable plate are perpendicular to a sliding direction of the sixth bottom corrugated retractable plate relative to the seventh bottom corrugated retractable plate.

23. The collapsible storage box according to claim 17, wherein each bottom retractable assembly is formed by four second bottom base plates; and one side edge of each second bottom base plate is connected to a bottom of the side retractable assembly at a corresponding position in a flipping manner.

24. The collapsible storage box according to claim 17, wherein a side edge of the bottom retractable assembly is hinged with a lower portion of one side retractable assembly through a hinge assembly; the hinge assembly comprises a first outer rotating plate, a second outer rotating plate, an arc-shaped elastic connector, a first inner rotating plate, and a second inner rotating plate; two open ends of the arc-shaped elastic connector are integrally connected to the first outer rotating plate and the second outer rotating plate, respectively; the first inner rotating plate is hinged with the second inner rotating plate; the first inner rotating plate is correspondingly disposed on an inner side of the first outer rotating plate; a first slide rail is disposed on one side and between the first inner rotating plate and the first outer rotating plate, and a first slider matched with the first slide rail is disposed on the other side; an extension direction of the first slide rail is perpendicular to a rotation direction of the first inner rotating plate; the second inner rotating plate is correspondingly disposed on an inner side of the second outer rotating plate; a second slide rail is disposed on one side and between the second inner rotating plate and the second outer rotating plate, and a second slider matched with the second slide rail is disposed on the other side; and an extension direction of the second slide rail is perpendicular to a rotation direction of the second inner rotating plate.

25. The collapsible storage box according to claim 2, wherein each bottom retractable assembly is

formed by two first bottom retractable plate assemblies sleeved with each other; and the first bottom retractable plate assembly is formed by two movable panels slidably sleeved with each other.

26. The collapsible storage box according to claim 2, wherein each bottom retractable assembly is formed by two second bottom retractable plate assemblies and a first bottom corrugated connecting retractable assembly connected between the two second bottom retractable plate assemblies; the second bottom retractable plate assembly is formed by two movable panels slidably sleeved with each other; the first bottom corrugated connecting retractable assembly is formed by a first bottom corrugated retractable plate and a second bottom corrugated retractable plate slidably sleeved with each other; respective extension-retraction directions of the first bottom corrugated retractable plate and the second bottom corrugated retractable plate are perpendicular to a sliding direction of the first bottom corrugated retractable plate relative to the second bottom corrugated retractable plate; and an extension-retraction direction of the second bottom retractable plate assembly is identical to the sliding direction of the first bottom corrugated retractable plate relative to the second bottom corrugated retractable plate.

27. The collapsible storage box according to claim 2, wherein each bottom retractable assembly is formed by two bottom retractable subassemblies and a second bottom corrugated connecting retractable assembly disposed between the two bottom retractable subassemblies; each bottom retractable subassembly comprises two first bottom base plates disposed symmetrically and a third bottom corrugated retractable plate connected between the two first bottom base plates; the second bottom corrugated connecting retractable assembly is formed by a fourth bottom corrugated retractable plate and a fifth bottom corrugated retractable plate slidably sleeved with each other; two side edges of each of the fourth bottom corrugated retractable plate and the fifth bottom corrugated retractable plate are connected to side edges of the corresponding first bottom base plates, respectively; and respective extension-retraction directions of the fourth bottom corrugated retractable plate and the fifth bottom corrugated retractable plate are perpendicular to a sliding direction of the fourth bottom corrugated retractable plate relative to the fifth bottom corrugated retractable plate.

28. The collapsible storage box according to claim 2, wherein each bottom retractable assembly is formed by a sixth bottom corrugated retractable plate and a seventh bottom corrugated retractable plate slidably sleeved with each other; and respective extension-retraction directions of the sixth bottom corrugated retractable plate and the seventh bottom corrugated retractable plate are perpendicular to a sliding direction of the sixth bottom corrugated retractable plate relative to the seventh bottom corrugated retractable plate.

29. The collapsible storage box according to claim 2, wherein each bottom retractable assembly is formed by four second bottom base plates; and one side edge of each second bottom base plate is connected to a bottom of the side retractable assembly at a corresponding position in a flipping manner.

30. The collapsible storage box according to claim 2, wherein a hinge assembly is further disposed at any position between adjacent two side retractable assemblies, between the lower portion of the side retractable assembly and the bottom retractable assembly, and between the upper portion of the vertical folding avoidance plate and the lower portion of the side retractable assembly on the corresponding side; the hinge assembly comprises a first outer rotating plate, a second outer rotating plate, an arc-shaped elastic connector, a first inner rotating plate, and a second inner rotating plate; two open ends of the arc-shaped elastic connector are integrally connected to the first outer rotating plate and the second outer rotating plate, respectively; the first inner rotating plate is hinged with the second inner rotating plate; the first inner rotating plate is correspondingly disposed on an inner side of the first outer rotating plate; a first slide rail is disposed on one side and between the first inner rotating plate and the first outer rotating plate, and a first slider matched with the first slide rail is disposed on the other side; an extension direction of the first slide rail is

perpendicular to a rotation direction of the first inner rotating plate; the second inner rotating plate is correspondingly disposed on an inner side of the second outer rotating plate; a second slide rail is disposed on one side and between the second inner rotating plate and the second outer rotating plate, and a second slider matched with the second slide rail is disposed on the other side; and an extension direction of the second slide rail is perpendicular to a rotation direction of the second inner rotating plate.

31. The collapsible storage box according to claim 10, wherein each bottom retractable assembly is formed by two first bottom retractable plate assemblies sleeved with each other; and the first bottom retractable plate assembly is formed by two movable panels slidably sleeved with each other.

32. The collapsible storage box according to claim 10, wherein each bottom retractable assembly is formed by two second bottom retractable plate assemblies and a first bottom corrugated connecting retractable assembly disposed between the two second bottom retractable plate assemblies; the second bottom retractable plate assembly is formed by two movable panels slidably sleeved with each other; the first bottom corrugated connecting retractable assembly is formed by a first bottom corrugated retractable plate and a second bottom corrugated retractable plate slidably sleeved with each other; respective extension-retraction directions of the first bottom corrugated retractable plate and the second bottom corrugated retractable plate are perpendicular to a sliding direction of the first bottom corrugated retractable plate relative to the second bottom corrugated retractable plate; and an extension-retraction direction of the second bottom retractable plate assembly is identical to the sliding direction of the first bottom corrugated retractable plate relative to the second bottom corrugated retractable plate.

33. The collapsible storage box according to claim 10, wherein each bottom retractable assembly is formed by two bottom retractable subassemblies and a second bottom corrugated connecting retractable assembly disposed between the two bottom retractable subassemblies; each bottom retractable subassembly comprises two first bottom base plates disposed symmetrically and a third bottom corrugated retractable plate connected between the two first bottom base plates; the second bottom corrugated connecting retractable assembly is formed by a fourth bottom corrugated retractable plate and a fifth bottom corrugated retractable plate slidably sleeved with each other; two side edges of each of the fourth bottom corrugated retractable plate and the fifth bottom corrugated retractable plate are connected to side edges of the corresponding first bottom base plates, respectively; and respective extension-retraction directions of the fourth bottom corrugated retractable plate and the fifth bottom corrugated retractable plate are perpendicular to a sliding direction of the fourth bottom corrugated retractable plate relative to the fifth bottom corrugated retractable plate.

34. The collapsible storage box according to claim 10, wherein each bottom retractable assembly is formed by a sixth bottom corrugated retractable plate and a seventh bottom corrugated retractable plate slidably sleeved with each other; and respective extension-retraction directions of the sixth bottom corrugated retractable plate and the seventh bottom corrugated retractable plate are perpendicular to a sliding direction of the sixth bottom corrugated retractable plate relative to the seventh bottom corrugated retractable plate.

35. The collapsible storage box according to claim 10, wherein each bottom retractable assembly is formed by four second bottom base plates; and one side edge of each second bottom base plate is connected to a bottom of the side retractable assembly at a corresponding position in a flipping manner.

36. The collapsible storage box according to claim 10, wherein a side edge of the bottom retractable assembly is hinged with a lower portion of one side retractable assembly through a hinge assembly; the hinge assembly comprises a first outer rotating plate, a second outer rotating plate, an arc-shaped elastic connector, a first inner rotating plate, and a second inner rotating plate; two open ends of the arc-shaped elastic connector are integrally connected to the first outer rotating

plate and the second outer rotating plate, respectively; the first inner rotating plate is hinged with the second inner rotating plate; the first inner rotating plate is correspondingly disposed on an inner side of the first outer rotating plate; a first slide rail is disposed on one side and between the first inner rotating plate and the first outer rotating plate, and a first slider matched with the first slide rail is disposed on the other side; an extension direction of the first slide rail is perpendicular to a rotation direction of the first inner rotating plate; the second inner rotating plate is correspondingly disposed on an inner side of the second outer rotating plate; a second slide rail is disposed on one side and between the second inner rotating plate and the second outer rotating plate, and a second slider matched with the second slide rail is disposed on the other side; and an extension direction of the second slide rail is perpendicular to a rotation direction of the second inner rotating plate.

37. The collapsible storage box according to claim 18, wherein each bottom retractable assembly is formed by two first bottom retractable plate assemblies sleeved with each other; and the first bottom retractable plate assembly is formed by two movable panels slidably sleeved with each other.

38. The collapsible storage box according to claim 18, wherein each bottom retractable assembly is formed by two second bottom retractable plate assemblies and a first bottom corrugated connecting retractable assembly disposed between the two second bottom retractable plate assemblies; the second bottom retractable plate assembly is formed by two movable panels slidably sleeved with each other; the first bottom corrugated connecting retractable assembly is formed by a first bottom corrugated retractable plate and a second bottom corrugated retractable plate slidably sleeved with each other; respective extension-retraction directions of the first bottom corrugated retractable plate and the second bottom corrugated retractable plate are perpendicular to a sliding direction of the first bottom corrugated retractable plate relative to the second bottom corrugated retractable plate; and an extension-retraction direction of the second bottom retractable plate assembly is identical to the sliding direction of the first bottom corrugated retractable plate relative to the second bottom corrugated retractable plate.

39. The collapsible storage box according to claim 18, wherein each bottom retractable assembly is formed by two bottom retractable subassemblies and a second bottom corrugated connecting retractable assembly disposed between the two bottom retractable subassemblies; each bottom retractable subassembly comprises two first bottom base plates disposed symmetrically and a third bottom corrugated retractable plate connected between the two first bottom base plates; the second bottom corrugated connecting retractable assembly is formed by a fourth bottom corrugated retractable plate and a fifth bottom corrugated retractable plate slidably sleeved with each other; two side edges of each of the fourth bottom corrugated retractable plate and the fifth bottom corrugated retractable plate are connected to side edges of the corresponding first bottom base plates, respectively; and respective extension-retraction directions of the fourth bottom corrugated retractable plate and the fifth bottom corrugated retractable plate are perpendicular to a sliding direction of the fourth bottom corrugated retractable plate relative to the fifth bottom corrugated retractable plate.

40. The collapsible storage box according to claim 18, wherein each bottom retractable assembly is formed by a sixth bottom corrugated retractable plate and a seventh bottom corrugated retractable plate slidably sleeved with each other; and respective extension-retraction directions of the sixth bottom corrugated retractable plate and the seventh bottom corrugated retractable plate are perpendicular to a sliding direction of the sixth bottom corrugated retractable plate relative to the seventh bottom corrugated retractable plate.

41. The collapsible storage box according to claim 18, wherein each bottom retractable assembly is formed by four second bottom base plates; and one side edge of each second bottom base plate is connected to a bottom of the side retractable assembly at a corresponding position in a flipping manner.

42. The collapsible storage box according to claim 18, wherein a side edge of the bottom

retractable assembly is hinged with a lower portion of one side retractable assembly through a hinge assembly; the hinge assembly comprises a first outer rotating plate, a second outer rotating plate, an arc-shaped elastic connector, a first inner rotating plate, and a second inner rotating plate; two open ends of the arc-shaped elastic connector are integrally connected to the first outer rotating plate and the second outer rotating plate, respectively; the first inner rotating plate is hinged with the second inner rotating plate; the first inner rotating plate is correspondingly disposed on an inner side of the first outer rotating plate; a first slide rail is disposed on one side and between the first inner rotating plate and the first outer rotating plate, and a first slider matched with the first slide rail is disposed on the other side; an extension direction of the first slide rail is perpendicular to a rotation direction of the first inner rotating plate; the second inner rotating plate is correspondingly disposed on an inner side of the second outer rotating plate; a second slide rail is disposed on one side and between the second inner rotating plate and the second outer rotating plate, and a second slider matched with the second slide rail is disposed on the other side; and an extension direction of the second slide rail is perpendicular to a rotation direction of the second inner rotating plate.