

A STORAGE CABINET

FIELD OF INVENTION

- 5 The invention relates to a furniture system. More particularly, the invention relates to a storage cabinet which is height adjustable.

BACKGROUND OF THE INVENTION

- 10 A wardrobe is a versatile storage system, designed either as a standalone piece of furniture or as a built-in unit, to organize clothing, accessories, and other personal belongings. Traditionally, the wardrobe is characterized by its large and tall structural design, it or may feature recessed compartments covered by sliding doors to blend seamlessly with the interior of a room. To optimize storage capacity while
15 maintaining visual appeal, the wardrobe extends vertically to reach the ceiling or roof of the room, making efficient use of available vertical space and enhancing the overall aesthetic of the room's interior.

- Despite its practicality, traditional wardrobes come with notable drawbacks.
- 20 Commercially available wardrobes are typically fixed in size, often leaving an unused gap between the top of the wardrobe and the ceiling, which not only wastes valuable storage space but can also create an unbalanced aesthetic. On the other hand, customized wardrobes, while addressing the issue of unused space, are significantly more expensive and time-consuming. Customization requires precise measurements
25 of the room, followed by the fabrication of panels tailored to fit the specific dimensions, a process that demands skilled labour and often involves extended lead times. These limitations make it challenging for consumers to find a cost-effective and efficient wardrobe solution that fully utilizes the available vertical space while meeting both functional and aesthetic needs.

Over the years, there are a few patented technologies over the prior art address the above-mentioned problem. Of interest in relating to a height-adjustable storage cabinet that fits seamlessly to the Ceiling is CN216135417U. This patent discloses a height-adjustable storage cabinet that fits seamlessly to the ceiling, comprising a cabinet body, at least one thick height-increasing frame, and an adjustable top, stacked sequentially from bottom to top. The top of the cabinet body is open, the thick height-increasing frame includes a thick rectangular frame, and the adjustable top includes a top panel. It further includes an internal adjustment structure installed between the uppermost thick height-increasing frame and the adjustable top, enabling the adjustable top to tightly press against the ceiling. The height of the storage cabinet can be adjusted by modifying the number of thick height-increasing frames or adding a thin height-increasing frame. Moreover, the internal and external adjustment structures ensure that there is no gap between the storage cabinet and the ceiling, significantly enhancing the vertical locking effect of the wardrobe, as well as improving the stability and robustness of the wardrobe after installation.

However, the storage system disclosed in this patent also presents certain drawbacks. The use of height-increasing frames as additional components significantly increases the overall cost of the system, especially when multiple frames are required to achieve the desired height. Moreover, the inclusion of an internal adjustment structure further adds to the complexity and expense of manufacturing and assembly. These additional elements not only raise the production costs but also make the system less accessible to budget-conscious consumers.

Accordingly, it would be desirable to provide a storage cabinet which solves the above-mentioned problem. The invention provide such a storage cabinet.

SUMMARY OF INVENTION

In one aspect of the invention, there is provided a storage cabinet comprises a first modular unit and a second modular unit, characterized in that the first and second modular units are configured to telescopically slide relative to each other in a vertical direction to adjust the height of the storage cabinet, wherein one of the modular units includes a bracket member affixed at a designated position along its body, being configured to engage with a portion of the other modular unit to support one modular unit above the other, and to secure the height of the storage cabinet.

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Preferably, the bracket member may be affixed to an inner surface of one of the modular units.

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Preferably, the bracket member may be affixed to an outer surface of one of the modular units.

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Preferably, one of the modular units may include prefabricated holes distributed along its body, the prefabricated holes being configured to enable the bracket member to be affixed at a selectable position to adjust the height of the storage cabinet.

Preferably, the modular units may be dimensioned such that one of the modular units is capable of slidably receiving at least a portion of the other modular unit.

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Preferably, the first modular unit may be positioned above the second modular unit during use.

Preferably, the modular units may include alignment markers to assist in affixing the bracket member at a designated position during assembly.

In one embodiment, the storage cabinet may further comprise one or more supportive panels sized to fit into recesses formed by the telescopic arrangement of the first and second modular units, configured to align with the external surfaces of the modular units to render the surfaces substantially even, and to provide additional structural support to suspend one modular unit above the other.

One skilled in the art will readily appreciate that the invention is well adapted to carry out the objects and obtain the ends and advantages mentioned, as well as those inherent therein. The embodiments described herein are not intended as limitations on the scope of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

For the purpose of facilitating an understanding of the invention, there is illustrated in the accompanying drawing the preferred embodiments from an inspection of which when considered in connection with the following description, the invention, its construction and operation and many of its advantages would be readily understood and appreciated.

Fig. 1 is a perspective view diagram illustrating a height adjustable storage cabinet.

Fig. 2 is a perspective view diagram illustrating first and second modular units of the storage cabinet.

Figs. 3a-3g illustrates a process of assembling the first modular unit.

Figs. 4a-4f illustrates a process of assembling the second modular unit.

Fig. 5 is a perspective view diagram illustrating the assembling process of the first and second modular units.

Fig. 6 is a front view diagram illustrating a bracket member of the storage cabinet.

Fig. 7 is a perspective view diagram illustrating the assembling process of supportive panels to the storage cabinet.

Figs. 8a-8b illustrates a process of assembling door panels to the storage cabinet.

Fig. 9 is a perspective view diagram illustrating the assembling process of door handle to one of the door panels.

15 DETAILED DESCRIPTION OF THE INVENTION

The invention will now be described in greater detail, by way of example, with reference to the drawings.

20 Referring to **Figs. 1 & 2**, a height-adjustable storage cabinet **1** is illustrated. In operation, the storage cabinet **1** has a configuration that allows its height to be adjusted to reach the ceiling or roof of a room, maximizing vertical space utilization while maintaining aesthetic appeal. The configuration comprises a first modular unit **10** and a second modular unit **20**, which are telescopically arranged to allow for
25 height adjustment during assembly or use.

In the preferred embodiment, the first modular unit **10** is supported above the ground by the second modular unit **20**. However, it should be noted that the positions of the modular units **10**, **20** can be reversed, depending on user preference or specific

installation requirements. The first modular unit **10** is preferably dimensioned to accommodate at least a portion of the second modular unit **20** in the telescopic manner. Alternatively, the second modular unit **20** may have a dimension larger than the first modular unit **10**, allowing it to accommodate at least a portion of the first modular unit **10**.

Both the first and second modular units **10, 20** can be constructed from multiple panels, which are assembled using respective assembly processes described later in this specification. The panels can be fabricated from a variety of wood materials, including but not limited to particleboard, medium-density fiberboard, plywood, solid wood, hardboard, melamine, veneered wood, and laminate. Preferably, the panels are made from engineered wood materials to reduce costs while maintaining durability.

In the preferred embodiment, the first modular unit **10** comprises a top panel **17**, a back panel **12, 14**, and a pair of opposing side panels **11, 13**, assembled to form an independent furniture unit with openings at the front and bottom. The bottom opening of the first modular unit **10** is configured to accommodate the insertion of the top portion of the second modular unit **20** through telescopic sliding movements, enabling seamless height adjustment.

A bracket member **15** is affixed within the bottom portion of the first modular unit **10** to provide structural support and secure the telescopic arrangement. Preferably, the bracket member **15** is configured as a U-shaped metal component that can be securely attached to the back panel **12, 14** and the opposing side panels **11, 13** of the first modular unit **10**. In one embodiment, the back panel **12, 14** is divided into two segments **12, 14**, with each segment **12, 14** pivotally attached to an edge of a corresponding side panel **11, 13**. This configuration enables the back panel's segments **12, 14** to fold and stack neatly against their respective side panels **11, 13**. The segments of the back panel **12, 14** may be attached to edges of the side panels **11,**

13 using laminate tape, hinges, or any type of pivot mechanism. Alternatively, the first modular unit **10** may include one or more intermediate panels **16** to create additional compartments for storage.

- 5 **Figs. 3a to 3g** illustrate an assembly process of the first modular unit **10**. As shown in **Fig. 3a**, the assembly begins with a first side panel **11** and its corresponding segment **12** laid flat on the ground in an expanded configuration. This arrangement facilitates the attachment of a first edge of the top panel **17**, at least one intermediate panel **16**, and the bracket member **15**. These components are preferably joined using screws.
- 10 Nevertheless, it should be noted that the screw fastening method can be easily replaced by other commercially available fastening mechanisms. In the subsequent steps, depicted in **Figs. 3b & 3c**, the segment **12** of the back panel **12, 14** is folded towards a second edge of the top panel **17**, the intermediate panel **16**, and the bracket member **15**, positioning the segment **12** perpendicular to the side panel **11**. In **Fig. 3d**,
- 15 a second side panel **13**, also in the expanded configuration, is attached to a third edge (opposite the first edge) of the top panel **17**, the intermediate panel **16**, and the bracket member **15**. **Fig. 3e** illustrates the step of folding the segment **14** on the second side panel **13** towards the second edge of the top panel **17**, the intermediate panel **16**, and the bracket member **15**. The two back panel segments **12, 14** are then taped together,
- 20 as shown in **Fig. 3f**, to form a unified panel (a single unit of back panel **12, 14**). Finally, the fully assembled first modular unit **10** is depicted in **Fig. 3g**.

- In the preferred embodiment, the second modular unit **20** comprises a bottom panel **26**, a back panel **22, 24**, and a pair of opposing side panels **21, 23**, assembled to form an
- 25 independent furniture unit with openings at the front and top. The top portion of the second modular unit **20** is dimensioned to telescopically insert into the bottom portion of the first modular unit **10**, allowing for height adjustment through sliding movements. The back panel **22, 24** may be divided into two segments **22, 24**, with each segment **22, 24** pivotally attached to an edge of a corresponding side panel **21**,

23, in a manner similar to the configuration of the first modular unit **10**.

Figs. 4a to 4f illustrate an assembly process of the second modular unit **20**. As shown in **Fig. 4a**, the assembly begins with a first side panel **21** and its corresponding segment **22** laid flat on the ground in an expanded configuration. This arrangement facilitates the attachment of a first edge of the bottom panel **26** and at least one intermediate panel **25** to the first side panel **21**. In the subsequent steps, shown in **Figs. 4b & 4c**, the segment **22** of the back panel **22, 24** is folded toward a second edge of the bottom panel **26** and the intermediate panel **25**, positioning the segment **22** perpendicular to the first side panel **21**. **Fig. 4d** illustrates the attachment of a second side panel **23**, also in the expanded configuration, to a third edge (opposite the first edge) of the bottom panel **26** and the intermediate panel **25**. The process continues with the folding of the second segment **24** of the back panel **22, 24** toward the second edge of the bottom panel **26** and the intermediate panel **25**. As shown in **Fig. 4e**, the two back panel segments **22, 24** are then joined, such as by taping or using other fastening mechanisms, to form a unified back panel **22, 24**. Finally, the fully assembled second modular unit **20** is depicted in **Fig. 4f**.

Referring to **Figs. 5 & 6**, the integration of the first and second modular units **10, 20** is illustrated. In the preferred embodiment, the second modular unit **20** is configured to telescopically slide into the bottom portion of the first modular unit **10**. The sliding motion stopped when the top portion of the second modular unit **20** engages with the bracket member **15** affixed to the internal surface of the first modular unit **10**. This engagement allows the first modular unit **10** to be securely suspended above the ground at a predetermined height.

To enable height adjustment, the internal surface of the first modular unit **10** may include a series of prefabricated holes distributed along its length. These holes are configured to allow the bracket member **15** to be attached at various selectable

positions, providing flexibility in setting the desired height of the storage cabinet **1**. Alternatively, alignment markers can be included on the internal surface to assist users in positioning the bracket member **15** accurately during assembly.

5 Due to the telescopic arrangement of the first and second modular units **10, 20**, recesses are formed on the exposed surfaces of the second modular unit **20**. These recesses can be fitted with one or more supportive panels **41, 42** to create a smooth and uniform exterior surface for the storage cabinet **1**. Additionally, the supportive panels **41, 42** provide enhanced structural support, assisting in suspending the first
10 modular unit **10** above the second modular unit **20**. In one specific embodiment, each supportive panel **41, 42** includes an edge configured to engage the side panel **11, 13** of the first modular unit **10**. This edge may include a flange that can be inserted between the side panels **11, 13, 21, 23** of the first and second modular units **10, 20**, ensuring the supportive panel **41, 42** is securely fixed to the corresponding recess.

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Figs. 8a & 8b illustrate the attachment of door units **51-54** to different portions of the storage cabinet **1**, effectively creating separate upper and lower storage compartments. The second modular unit **20** includes a plurality of undercuts along front edges of its side panels **21, 23**. These undercuts expose the inner surfaces of the side panels **11, 13**
20 of the first modular unit **10**, as well as the inner surfaces of the supportive panels **41, 42**. Door hinges are mounted within the undercuts to ensure that the door units **51-54** are aligned at the same surface level. Alternatively, the first modular unit **10** may be attached with a plurality of leveling member, eliminating the need for the undercuts in this configuration.

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As shown in **Fig. 9**, an L-shaped bracket **55** may be attached to the edge of at least one door unit **51-54**, serving as a door handle. This bracket **55** allows the user to grip and easily open the corresponding door unit **51-54**.

The present disclosure includes as contained in the appended claims, as well as that of the foregoing description. Although this invention has been described in its preferred form with a degree of particularity, it is understood that the present disclosure of the preferred form has been made only by way of example and that numerous changes in
5 the details of construction and the combination and arrangements of parts may be resorted to without departing from the scope of the invention.

CLAIMS

1. A storage cabinet (1) comprising:
a first modular unit (10) and a second modular unit (20);
5 characterized in that the first and second modular units (10, 20) are configured to telescopically slide relative to each other in a vertical direction to adjust the height of the storage cabinet (1);
wherein one of the modular units (10, 20) includes a bracket member (15) affixed at a designated position along its body, being configured to engage with a portion of the
10 other modular unit (10, 20) to support one modular unit (10, 20) above the other, and to secure the height of the storage cabinet (1).
2. The storage cabinet (1) according to claim 1, wherein the bracket member (15) is affixed to an inner surface of one of the modular units (10, 20).
- 15 3. The storage cabinet (1) according to claim 1 or 2, wherein the bracket member (15) is affixed to an outer surface of one of the modular units (10, 20).
4. The storage cabinet (1) according to any one of the preceding claims, wherein one
20 of the modular units (10, 20) includes prefabricated holes distributed along its body, the prefabricated holes being configured to enable the bracket member (15) to be affixed at a selectable position to adjust the height of the storage cabinet (1).
5. The storage cabinet (1) according to any one of the preceding claims, wherein the
25 modular units (10, 20) are dimensioned such that one of the modular units (10, 20) is capable of slidably receiving at least a portion of the other modular unit (10, 20).
6. The storage cabinet (1) according to any one of the preceding claims, wherein the first modular unit (10) is positioned above the second modular unit (20) during use.

7. The storage cabinet (1) according to any one of the preceding claims, wherein the modular units (10, 20) include alignment markers to assist in affixing the bracket member (15) at a designated position during assembly.

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8. The storage cabinet (1) according to any one of the preceding claims, further comprising one or more supportive panels (41, 42) sized to fit into recesses formed by the telescopic arrangement of the first and second modular units (10, 20), configured to align with the external surfaces of the modular units (10, 20) to render the surfaces
10 substantially even, and to provide additional structural support to suspend one modular unit (10, 20) above the other.

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