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(54) **PULL-TYPE STORAGE BED**

(57) Disclosed is a pull-out storage bed, including an electric bed (1), a surrounding edge assembly (2), a supporting assembly (3) and a drawer assembly (4). The surrounding edge assembly (2) is of a hollow structure, the supporting assembly (3) is arranged in the hollow structure of the surrounding edge assembly (2), the electric bed (1) is arranged on the surrounding edge assembly (2) by means of the supporting assembly (3), and drawer openings through which the drawer assembly (4) passes are formed in the periphery of the surrounding edge assembly (2). Through cooperation of the supporting assembly (3) and the surrounding edge assembly (2), the size of the surrounding edge assembly (2) is reduced. Further through cooperation with the drawer assembly (4) for storing articles, the floor area of the entire bed is reduced, the space for storing the articles is enlarged, and the space utilization is improved.

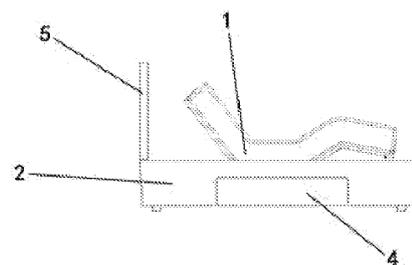


Fig. 1

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Description

Field of the Invention

[0001] The present disclosure relates to the technical field of furniture, in particular to a pull-out storage bed.

Background of the Invention

[0002] What are relatively common on the current market are an ordinary bed frame with a storage function and a bed having large-size surrounding edges and setting the storage function inside the surrounding edges. They greatly occupy bedroom space. Either they cannot meet the customer's demand of using an electric bed, or the surrounding edges are large in size and occupy the space that is originally not enough, which eliminates the consumer's plan of buying the electric bed.

Summary of the Invention

[0003] The present disclosure provides a pull-out storage bed to solve the technical problem that a small-sized bedroom is not suitable for the placement of an electric bed due to the influence of space.

[0004] For this purpose, the present disclosure provides the pull-out storage bed, and the pull-out storage bed includes an electric bed, a surrounding edge assembly, a supporting assembly and a drawer assembly. The surrounding edge assembly is of a hollow structure, and the supporting assembly is arranged in the hollow structure of the surrounding edge assembly. The electric bed is arranged on the surrounding edge assembly by means of the supporting assembly, and drawer openings through which the drawer assembly passes are formed in a periphery of the surrounding edge assembly.

[0005] Through cooperation of the supporting assembly and the surrounding edge assembly, the size of the surrounding edge assembly is reduced, then through cooperation with the drawer assembly for storing articles, the floor area of the entire bed is reduced, the space for storing the articles is enlarged, and the space utilization is improved.

[0006] Further, the surrounding edge assembly includes a first surrounding edge, a second surrounding edge, a third surrounding edge and a fourth surrounding edge which are sequentially connected end to end. The first surrounding edge is parallel to the third surrounding edge, and the second surrounding edge is parallel to the fourth surrounding edge.

[0007] Further, the supporting assembly includes a first supporting rod, a second supporting rod and a third supporting rod, and two ends of the first supporting rod, two ends of the second supporting rod and two ends of the third supporting rod are respectively connected with the first surrounding edge and the third surrounding edge.

[0008] Further, the drawer openings include a first drawer opening and a second drawer opening, and the

drawer assembly includes a first drawer, a second drawer, a first guide rail and a second guide rail. The first drawer opening is formed in the first surrounding edge, the second drawer opening is formed in the third surrounding edge, and the first drawer opening directly faces the second drawer opening. The first guide rail is arranged on one side of the first drawer opening and the second drawer opening. The second guide rail is arranged on the other side of the first drawer opening and the second drawer opening. Horizontal heights of the first guide rail and the second guide rail are smaller than a height of the supporting assembly. The first drawer can be pulled out or pushed back relative to the first drawer opening by means of the first guide rail and the second guide rail, and the second drawer can be pulled out or pushed back relative to the second drawer opening by means of the first guide rail and the second guide rail.

[0009] Further, the drawer openings further include a third drawer opening, and the drawer assembly further includes a third drawer, a third guide rail and a fourth guide rail. The third drawer opening is formed in the second surrounding edge. One end of the third guide rail and one end of the fourth guide rail are respectively and perpendicularly connected with the second guide rail, and the other end of the third guide rail and the other end of the fourth guide rail are respectively fixed to two sides of the third drawer opening. The third drawer can be pulled out or pushed back relative to the third drawer opening by means of the third guide rail and the fourth guide rail.

[0010] Further, the drawer assembly further includes baffles which are arranged on the first guide rail and the second guide rail or on the third guide rail and the fourth guide rail.

[0011] Further, an outer wall of the fourth surrounding edge inclines inwards from top to bottom to form a slanted surface.

[0012] Further, the pull-out storage bed further includes a straight backrest which is vertically arranged on a top of the fourth surrounding edge.

[0013] Further, the electric bed includes a base, a turnover mechanism and a load-bearing mechanism. The load-bearing mechanism is horizontally arranged on a top face of the base. The turnover mechanism is arranged between the base and the load-bearing mechanism. The load-bearing mechanism can be partially turned over relative to the base by means of the turnover mechanism.

[0014] Further, the load-bearing mechanism includes a first bed board, a second bed board, a third bed board and a fourth bed board which are sequentially in pivot connection at junctions.

Brief Description of the Drawings

[0015] By reading the detailed description of the non-restrictive embodiments with reference to the drawings below, other features, objectives and advantages of the disclosure will be more apparent:

Fig. 1 is a side view of a pull-out storage bed of an embodiment of the disclosure;

Fig. 2 is a schematic diagram of an internal structure of a pull-out storage bed of an embodiment of the disclosure; and

Fig. 3 is a perspective view of a pull-out storage bed of an embodiment of the disclosure.

[0016] Reference signs of the description:

1-electric bed, 11-base, 12-load-bearing mechanism, 2-surrounding edge assembly, 21-first surrounding edge, 22-second surrounding edge, 23-third surrounding edge, 24-fourth surrounding edge, 3-supporting assembly, 31-first supporting rod, 32-second supporting rod, 33-third supporting rod, 4-drawer assembly, 41-first drawer, 42-second drawer, 43-first guide rail, 44-second guide rail, 45-third drawer, 46-third guide rail, 47-fourth guide rail, 48-baffle, and 5-backrest.

Detailed Description of the Embodiments

[0017] The present disclosure is further described in detail below with reference to the drawings. It should be noted that terms indicative of orientation or position relationships indicate the orientation or position relationships shown based on the drawings, which is merely for the convenience of describing the disclosure and simplifying the description, and not for indicating or implying that the components or parts referred to should have specific orientations and be constructed in the specific orientations, and thus cannot be interpreted as the limitation on the disclosure.

[0018] Fig. 1 is a side view of a pull-out storage bed of an embodiment of the disclosure, and Fig. 2 is a schematic diagram of an internal structure of a pull-out storage bed of an embodiment of the disclosure. As shown in Fig. 1 and Fig. 2, the pull-out storage bed provided by the present disclosure includes an electric bed 1, a surrounding edge assembly 2, a supporting assembly 3 and a drawer assembly 4. the surrounding edge assembly 2 is of a hollow structure, and the supporting assembly 3 is arranged in the hollow structure of the surrounding edge assembly 2. The electric bed 1 is arranged on the surrounding edge assembly 2 by means of the supporting assembly 3, and drawer openings through which the drawer assembly 4 passes are formed in a periphery of the surrounding edge assembly 2.

[0019] A closed or semi-closed space is enclosed by the surrounding edge assembly 2, and by additionally forming the drawer openings in the side edges of the surrounding edge assembly 2 to serve as passages of the drawer assembly 4, the drawer assembly 4 can be used for storing articles. In a closed state, the drawer assembly 4 is located in the internal space of the surrounding edge assembly 2; and in an opened state, the drawer assembly 4 is partially or fully located outside the

internal space of the surrounding edge assembly 2 to store and take out the articles. The surrounding edge assembly 2 is supported by the supporting assembly 3, so that the size of the surrounding edges can be reduced to reduce the floor area. The drawer assembly 4 is arranged in a bottom space of the entire bed, and thus storage space of a bedroom is increased and the space utilization is improved.

[0020] Further, the surrounding edge assembly 2 includes a first surrounding edge 21, a second surrounding edge 22, a third surrounding edge 23 and a fourth surrounding edge 24 which are sequentially connected end to end. The first surrounding edge 21 is parallel to the third surrounding edge 23, and the second surrounding edge 22 is parallel to the fourth surrounding edge 24.

[0021] The semi-closed space is enclosed by the four independent surrounding edges to support the electric bed 1 and provide an invisible space for storing the articles, which can not only facilitate disassembly and assembly and transportation, but also beautify a bed body.

[0022] Further, the supporting assembly 3 includes a first supporting rod 31, a second supporting rod 32 and a third supporting rod 33. Two ends of the first supporting rod 31, two ends of the second supporting rod 32 and two ends of the third supporting rod 33 are respectively connected with the first surrounding edge 21 and the third surrounding edge 23.

[0023] The first supporting rod 31, the second supporting rod 32 and the third supporting rod 33 are horizontally arranged in the internal space of the surrounding edge assembly 2 in a spaced manner to support the surrounding edge assembly 2 in case of deforming, and to place the electric bed 1. The specific position and number for the supporting rods can be adjusted according to actual needs, which is simple and convenient and facilitates disassembly and assembly.

[0024] Further, the drawer openings include a first drawer opening and a second drawer opening, and the drawer assembly 4 includes a first drawer 41, a second drawer 42, a first guide rail 43 and a second guide rail 44. The first drawer opening is formed in the first surrounding edge 21, the second drawer opening is formed in the third surrounding edge 23, and the first drawer opening directly faces the second drawer opening. The first guide rail 43 is arranged on one side of the first drawer opening and the second drawer opening, the second guide rail 44 is arranged on the other side of the first drawer opening and the second drawer opening. The horizontal heights of the first guide rail 43 and the second guide rail 44 are smaller than a height of the supporting assembly 3. The first drawer 41 can be pulled out or pushed back relative to the first drawer opening by means of the first guide rail 43 and the second guide rail 44, and the second drawer 42 can be pulled out or pushed back relative to the second drawer opening by means of the first guide rail 43 and the second guide rail 44.

[0025] The first drawer 41 and the second drawer 42 are symmetrically arranged on the two sides of the sur-

rounding edge assembly 2 to store the articles. The first drawer 41 and the second drawer 42 are arranged on the first guide rail 43 and the second guide rail 44 and can be pulled out or pushed back along the first guide rail 43 and the second guide rail 44, which is simple and convenient.

[0026] Further, the drawer openings further include a third drawer opening. The drawer assembly 4 further includes a third drawer 45, a third guide rail 46 and a fourth guide rail 47. The third drawer opening is formed in the second surrounding edge 22. One end of the third guide rail 46 and one end of the fourth guide rail 47 are respectively and perpendicularly connected with the second guide rail 44. The other ends of the third guide rail 46 and the other end of the fourth guide rail 47 are respectively fixed to two sides of the third drawer opening. The third drawer 45 can be pulled out or pushed back relative to the third drawer opening by means of the third guide rail 46 and the fourth guide rail 47.

[0027] By additionally arranging the pair of guide rails by means of the second guide rail 44 and the second surrounding edge 22 as supporting members and additionally arranging the third drawer 45, the storage space is further increased, and the space utilization is improved.

[0028] In addition, the plurality of foregoing guide rails can be directly riveted on metal members used for mounting the guide rails by means of closed blind rivets, and the metal members are fixedly arranged on the corresponding surrounding edges to facilitate positioning during mounting. The horizontal heights of the bottom faces of the three drawers are slightly larger than that of the bottom face of the surrounding edge assembly 2, so that the drawers are not in contact with the bottom face of the surrounding edge assembly 2, which can prevent the drawers from being affected with damp and avoid noise generated by the friction with the bottom face of the surrounding edge assembly 2 when the drawers are pulled.

[0029] Further, the drawer assembly 4 further includes baffles 48 which are arranged on the first guide rail 43 and the second guide rail 44 or on the third guide rail 46 and the fourth guide rail 47.

[0030] According to the sizes and number of the drawers, the corresponding baffles 48 are additionally arranged to shield the openings, so that dust and other garbage can be blocked.

[0031] Further, the outer wall of the fourth surrounding edge 24 inclines inwards from top to bottom to form a slanted surface.

[0032] As for a general family house, skirting boards are mounted at s of wall surfaces and the ground to make the whole look more beautiful and have a stereo sense, but this will produce a gap between the bed and the wall, leading the bed unable to be fully fitted to the wall and prone to shaking. By arranging the side, attached to the wall, of the fourth surrounding edge 24 into the top-down slanted surface, the fourth surrounding edge 24 is tightly attached to the wall and shaking and damage is avoided.

[0033] Further, the pull-out storage bed also includes

a straight backrest 5 which is vertically arranged on a top of the fourth surrounding edge 24.

[0034] By adding the backrest 5 on the surrounding edge close to the wall, the contact area with the wall is increased, and the backrest 5 provides place for people to lean against. Furthermore, the stability of the entire bed is improved, bed shaking is reduced, clothes can also be avoided from getting dirty, and the appearance of the bed is improved.

[0035] Further, Fig. 3 is a perspective view of a pull-out storage bed of an embodiment of the disclosure. As shown in Fig. 3, the electric bed 1 includes a base 11, a turnover mechanism and a load-bearing mechanism 12. The load-bearing mechanism 12 is horizontally arranged on a top face of the base 11, the turnover mechanism is arranged between the base 11 and the load-bearing mechanism 12, and the load-bearing mechanism 12 can be partially turned over relative to the base 11 by means of the turnover mechanism.

[0036] The electric bed 1 drives the load-bearing mechanism 12 to move by means of the turnover mechanism, so that the shape of a bed surface is changed to adapt to the curve of a human body so as to make the human body fully supported and have a better rest, which enhances the comfort of the bed.

[0037] Further, the load-bearing mechanism 12 includes a first bed board, a second bed board, a third bed board and a fourth bed board which are sequentially in pivot connection at junctions.

[0038] The load-bearing mechanism 12 are actually the bed boards, and the entire bed board of the electric bed 1 generally consists of the plurality of the bed boards that are in pivot connection. In this way, the load-bearing mechanism 12 can deform only by changing the angles of certain bed boards relative to the base 11, thus realizing a deformation function of the bed surface of the electric bed 1, which is simple and efficient.

[0039] After considering the specification and practicing the disclosure herein, those skilled in the art will easily think of other implementations of the disclosure. The present disclosure is intended to cover any variations, uses or adaptive changes of the disclosure, and these variations, uses or adaptive changes follow the general principles of the disclosure and include common knowledge or conventional technical means in the technical field that are not disclosed in the present disclosure. The specification and embodiments are considered exemplary only, and the true scope and spirit of the disclosure are indicated by the following claims.

[0040] It should be appreciated that the present disclosure is not limited to the precise structure that having been described above and shown in the drawings and can have various modifications and changes without departing its scope.

Claims

1. A pull-out storage bed, **characterized in that** the pull-out storage bed comprises an electric bed, a surrounding edge assembly, a supporting assembly and a drawer assembly; wherein the surrounding edge assembly is of a hollow structure, the supporting assembly is arranged in the hollow structure of the surrounding edge assembly, the electric bed is arranged on the surrounding edge assembly by means of the supporting assembly, and drawer openings through which the drawer assembly passes are formed in a periphery of the surrounding edge assembly.
2. The pull-out storage bed according to claim 1, **characterized in that** the surrounding edge assembly comprises a first surrounding edge, a second surrounding edge, a third surrounding edge and a fourth surrounding edge which are sequentially connected end to end, the first surrounding edge is parallel to the third surrounding edge, and the second surrounding edge is parallel to the fourth surrounding edge.
3. The pull-out storage bed according to claim 2, **characterized in that** the supporting assembly comprises a first supporting rod, a second supporting rod and a third supporting rod, and two ends of the first supporting rod, two ends of the second supporting rod and two ends of the third supporting rod are respectively connected with the first surrounding edge and the third surrounding edge.
4. The pull-out storage bed according to claim 2 or 3, **characterized in that** the drawer openings comprise a first drawer opening and a second drawer opening, and the drawer assembly comprises a first drawer, a second drawer, a first guide rail, and a second guide rail;

wherein the first drawer opening is formed in the first surrounding edge, the second drawer opening is formed in the third surrounding edge, and the first drawer opening directly faces the second drawer opening;

the first guide rail is arranged on one side of the first drawer opening and the second drawer opening, the second guide rail is arranged on the other side of the first drawer opening and the second drawer opening, and horizontal heights of the first guide rail and the second guide rail are smaller than a height of the supporting assembly; and

the first drawer can be pulled out or pushed back relative to the first drawer opening by means of the first guide rail and the second guide rail, and the second drawer can be pulled out or pushed

back relative to the second drawer opening by means of the first guide rail and the second guide rail.

5. The pull-out storage bed according to claim 4, **characterized in that** the drawer openings further comprise a third drawer opening, and the drawer assembly further comprises a third drawer, a third guide rail and a fourth guide rail;

wherein the third drawer opening is formed in the second surrounding edge, one end of the third guide rail and one end of the fourth guide rail are respectively and perpendicularly connected with the second guide rail, the other end of the third guide rail and the other end of the fourth guide rail are respectively fixed to two sides of the third drawer opening, the third drawer can be pulled out or pushed back relative to the third drawer opening by means of the third guide rail and the fourth guide rail.
6. The pull-out storage bed according to claim 5, **characterized in that** the drawer assembly further comprises baffles which are arranged on the first guide rail and the second guide rail or on the third guide rail and the fourth guide rail.
7. The pull-out storage bed according to claim 2, **characterized in that** an outer wall of the fourth surrounding edge inclines inwards from top to bottom to form a slanted surface.
8. The pull-out storage bed according to claim 7, **characterized in that** the pull-out storage bed further comprises a straight backrest which is vertically arranged on a top of the fourth surrounding edge.
9. The pull-out storage bed according to claim 1, **characterized in that** the electric bed comprises a base, a turnover mechanism and a load-bearing mechanism;

wherein the load-bearing mechanism is horizontally arranged on a top face of the base, the turnover mechanism is arranged between the base and the load-bearing mechanism, and the load-bearing mechanism can be partially turned over relative to the base by means of the turnover mechanism.
10. The pull-out storage bed according to claim 9, **characterized in that** the load-bearing mechanism comprises a first bed board, a second bed board, a third bed board, and a fourth bed board which are sequentially in pivot connection at junctions.

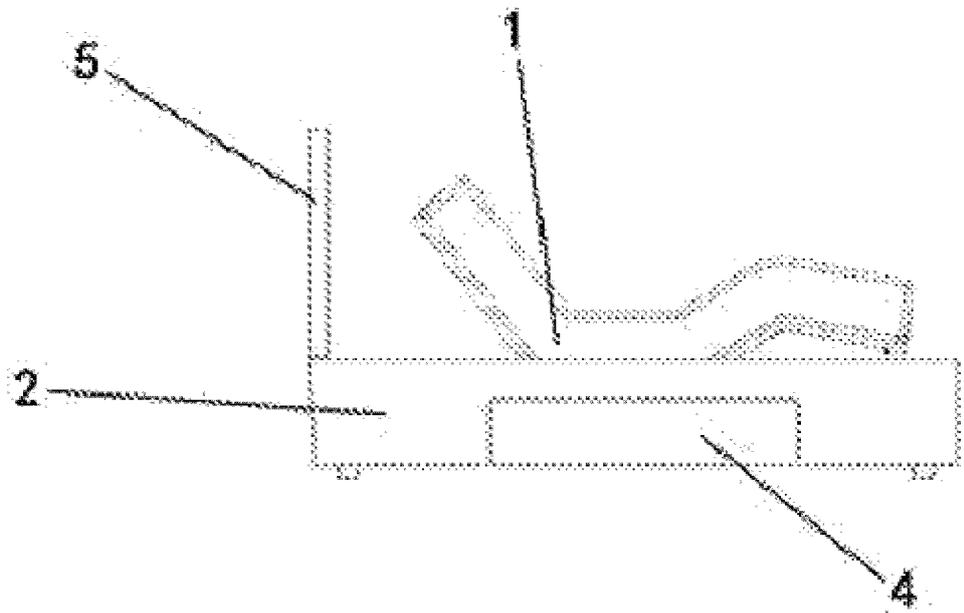


Fig. 1

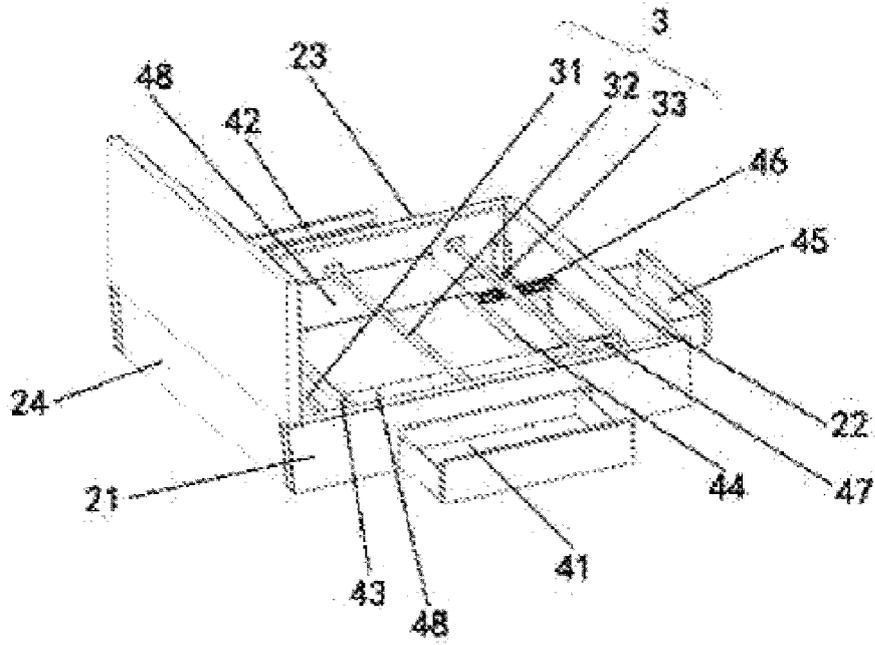


Fig. 2

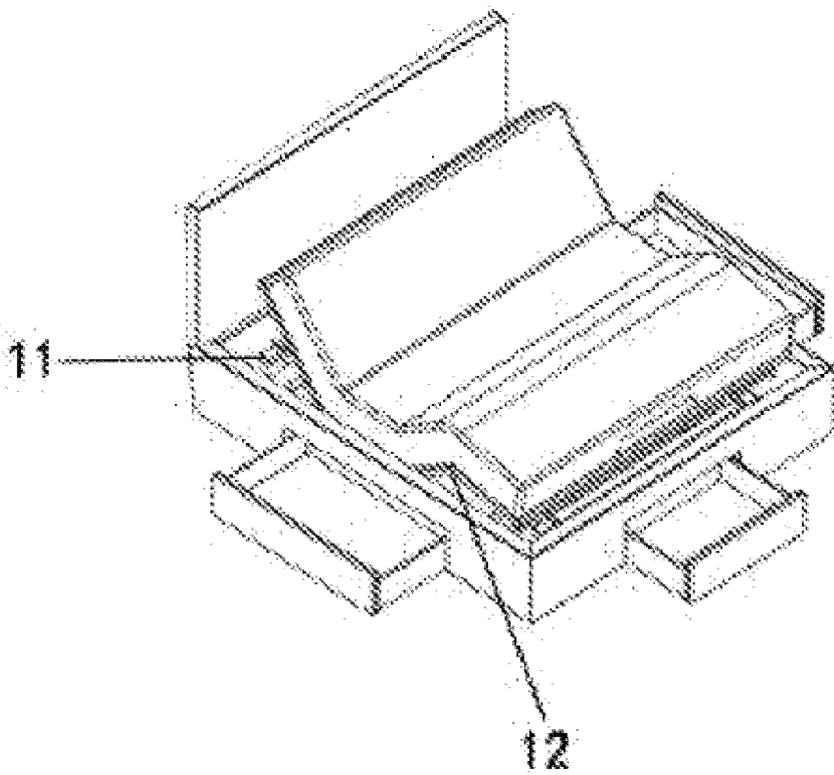


Fig. 3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2020/080576

5	A. CLASSIFICATION OF SUBJECT MATTER A47C 19/22(2006.01)i According to International Patent Classification (IPC) or to both national classification and IPC		
10	B. FIELDS SEARCHED Minimum documentation searched (classification system followed by classification symbols) A47C Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched		
15	Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) CNPAT, WPI, EPODOC, CNKI: 麒盛科技股份有限公司, 床, 储物, 抽屉, 抽拉, 电动, 围边, 挡边, 侧边, 床尾, 围挡, 支撑, 导轨, 底座, 翻转, bed, storage, drawer, electric, support+, rail, seat, overturn, turn over		
20	C. DOCUMENTS CONSIDERED TO BE RELEVANT		
	Category*	Citation of document, with indication, where appropriate, of the relevant passages	
		Relevant to claim No.	
	X	CN 208491422 U (FENGSHANG INDUSTRIAL CO., LTD.) 15 February 2019 (2019-02-15) description paragraphs [0003]-[0043], figures 1-11	1, 9-10
	Y	CN 208491422 U (FENGSHANG INDUSTRIAL CO., LTD.) 15 February 2019 (2019-02-15) description paragraphs [0003]-[0043], figures 1-11	2-8
25	Y	CN 104433474 A (CHENGDU XINMU YIJU FURNITURE CO., LTD.) 25 March 2015 (2015-03-25) description paragraphs [0003]-[0010], figure 1	2-8
	A	CN 205432948 U (SUZHOU UNIVERSITY) 10 August 2016 (2016-08-10) entire document	1-10
30	A	CN 209058482 U (SHAORYANG SHUKANGMEI FURNITURE CO., LTD.) 05 July 2019 (2019-07-05) entire document	1-10
	A	CN 203953019 U (LIU, Wenlong) 26 November 2014 (2014-11-26) entire document	1-10
35	A	US 2018064259 A1 (SHIH, Chuan-Hang) 08 March 2018 (2018-03-08) entire document	1-10
	<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C.		<input checked="" type="checkbox"/> See patent family annex.
40	* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent but published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family	
45	Date of the actual completion of the international search 20 May 2020	Date of mailing of the international search report 30 June 2020	
50	Name and mailing address of the ISA/CN China National Intellectual Property Administration (ISA/ CN) No. 6, Xitucheng Road, Jimenqiao Haidian District, Beijing 100088 China	Authorized officer	
55	Facsimile No. (86-10)62019451	Telephone No.	

Form PCT/ISA/210 (second sheet) (January 2015)

INTERNATIONAL SEARCH REPORT

International application No.

PCT/CN2020/080576

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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2017042336 A1 (CRAVER, Larry J.) 16 February 2017 (2017-02-16) entire document	1-10

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INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No. PCT/CN2020/080576

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Patent document cited in search report			Publication date (day/month/year)	Patent family member(s)		Publication date (day/month/year)	
CN	208491422	U	15 February 2019	TW	M562064	U	21 June 2018
CN	104433474	A	25 March 2015	None			
CN	205432948	U	10 August 2016	None			
CN	209058482	U	05 July 2019	None			
CN	203953019	U	26 November 2014	None			
US	2018064259	A1	08 March 2018	None			
US	2017042336	A1	16 February 2017	None			

Form PCT/ISA/210 (patent family annex) (January 2015)