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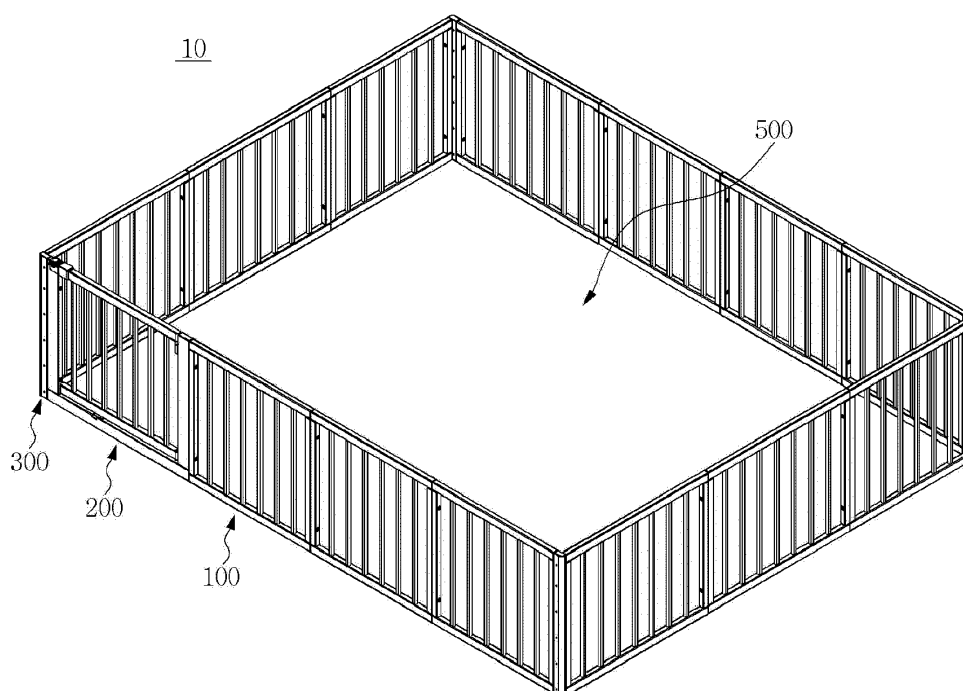
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(54) **TRANSFORMABLE PREFABRICATED FENCE**

(57) The present disclosure provides a transformable prefabricated fence. The transformable prefabricated fence includes: a plurality of fence guards; a fence door placed between the plurality of fence guards; and a corner fastening member placed in a corner region to fasten the fence guards together or fasten the fence guards and

the fence door, wherein one side of the corner fastening member is curved. According to the present disclosure, the prefabricated fence ensures secure fastening without using joints by means of guard fastening members at opposite ends of a fence guard and a corner fastening member placed in a corner region.

【Fig.1】



Description

BACKGROUND OF THE DISCLOSURE

Field of the disclosure

[0001] The present disclosure relates to a transformable prefabricated fence and, more particularly, to a transformable prefabricated fence that is securely fastened with a corner fastening member placed in a corner region and guard fastening members placed at opposite ends of a fence guard, and can transform into an infant bed, a bed guard, etc. using a plurality of drilled holes at different positions on the corner fastening member.

Related Art

[0002] Prefabricated fences are commonly used to provide a safe space where a child can play. Although the prefabricated fences are advantageous in that a user can transform them into various forms to fit the user's environment, they are not securely fastened in place when assembled, which may lead to safety accidents, and the duration of use is short since they are used only for young children.

[0003] As a related art technology, Korean Laid-Open Utility Model No. 20-2020-0000765, titled "Prefabricated baby fence", which only discloses a baby fence that allows connecting members to be selectively connected at various angles to upper and lower ends of the fence is known.

SUMMARY

[0004] The present disclosure provides a prefabricated fence that prevents safety accidents by being securely assembled in place and has a long duration of use because it can transform into other forms using a plurality of different drilled holes.

[0005] According to an exemplary embodiment of the present disclosure, there is provided a transformable prefabricated fence including: a plurality of fence guards; a fence door placed between the plurality of fence guards; and a corner fastening member placed in a corner region to fasten the fence guards together or fasten the fence guards and the fence door, wherein one side of the corner fastening member is curved.

BRIEF DESCRIPTION OF THE DRAWINGS

[0006]

FIGS. 1 and 2 are views showing a transformable prefabricated fence according to an embodiment of the present disclosure.

FIG. 3 is a view showing a fence guard according to an embodiment of the present disclosure.

FIG. 4 is a view showing a fence door according to

an embodiment of the present disclosure.

FIG. 5 is a view showing a corner fastening member according to an embodiment of the present disclosure.

FIGS. 6 and 7 are views showing a bed corner fastening member and an infant bed according to an embodiment of the present disclosure.

FIGS. 8 to 10 are views showing a prefabricated fence with fixing bands connected to it according to an embodiment of the present disclosure.

FIGS. 11 to 15 are views of how a prefabricated fence is transformed according to another embodiment of the present disclosure.

15 DESCRIPTION OF EXEMPLARY EMBODIMENTS

[0007] The specific structural or functional description disclosed herein is merely illustrative for the purpose of describing embodiments according to the concept of the present disclosure. The embodiments according to the concept of the present disclosure can be implemented in various forms, and cannot be construed as limited to the embodiments set forth herein.

[0008] The embodiments according to the concept of the present disclosure can be variously modified and have various shapes. Thus, the embodiments are illustrated in the drawings and are intended to be described herein in detail. However, the embodiments according to the concept of the present disclosure are not construed as limited to specified disclosures, and include all changes, equivalents, or substitutes that do not depart from the spirit and technical scope of the present disclosure.

[0009] The terms used in the present application are merely used to describe particular embodiments, and are not intended to limit the present disclosure. Singular forms in the present disclosure are intended to include the plural forms as well, unless the context clearly indicates otherwise. It will be further understood that terms such as "including", "comprising", or "having," etc., are intended to indicate the existence of the features, numbers, operations, actions, components, parts, or combinations thereof disclosed in the specification, and are not intended to preclude the possibility that one or more other features, numbers, operations, actions, components, parts, or combinations thereof may exist or may be added.

[0010] Hereinafter, exemplary embodiments of the present disclosure will be described with reference to the accompanying drawings.

[0011] FIGS. 1 and 2 are views showing a transformable prefabricated fence according to an embodiment of the present disclosure. Referring to FIG. 1, the prefabricated fence includes a plurality of fence guards 100, a fence door 200, and a corner fastening member 300.

[0012] The plurality of fence guards 100 may be fastened together with guard fastening members vertically placed at opposite ends. The fence guards 100 may have a horizontal width of at least one of 600 mm, 700 mm,

800 mm, and 190 mm, but the horizontal width of the fence guards 100 is not limited to them. The user is able to create an inside space 500 where a child can hang out safely by fastening the fence guards 100 of various horizontal widths freely as they want.

[0013] Once the prefabricated fence 10 is completed, a baby playmat may be added to the inside space 500. In this case, the baby playmat should be less than 40 mm in height in order to prevent any injuries to the child that might be caused by the height difference between the playmat and the prefabricated fence.

[0014] The fence door 200 may be placed between the plurality of fence guards and function as a door, and the prefabricated fence 10 may have one or more fence doors 200 but not limited thereto.

[0015] The corner fastening member 300 may be placed in a corner region of the prefabricated fence 10 to fasten the fence guards 100 together or fasten the fence guards 100 and the fence door 200. One side of the corner fastening member 300 may be curved, with a curvature of 15R. With one side of the corner fastening member 300 curved, safety accidents can be prevented.

[0016] A rubber pad for preventing slippage may be added to the bottoms of the fence guards 100 and fence door 200. The fence guards 100 and fence door 200 may be 600 mm or less in height.

[0017] The fence guards 100 and the fence door 200 may be made of a hardwood with a low shrink-swell rate. For example, they may be made of at least one of rubberwood and beech.

[0018] FIG. 3 is a view showing a fence guard according to an embodiment of the present disclosure.

[0019] Referring to FIG. 3, the fence guards 100 each includes a guard upper frame 110, a guard supporting frame 120, guard fastening members 130, and a guard lower frame 140. The guard supporting frame 120 may be vertically placed between the guard upper frame 110 and the guard lower frame 140. Ribs of the guard supporting frame 120 may be spaced at intervals of 55 mm to 65 mm.

[0020] The guard fastening members 130 may be placed at opposite ends of the fence guard 100, and may be fastened to other fence guards with bolts through a plurality of drilled holes disposed on them. That is, the fence guards 100 may be securely fastened in place without using joints, as the guard fastening members 130 is vertically placed at opposite ends, unlike conventional fence guards. The present disclosure gives a better aesthetic appearance by allowing for fastening using the guard fastening members 130, and enables low-cost production and easy quality control because no mold is needed.

[0021] FIG. 4 is a view showing a fence door according to an embodiment of the present disclosure.

[0022] Referring to FIG. 4, the fence door 200 includes a door upper frame 210, a door supporting frame 220, door fastening members 230, a door lower frame 240, a lower frame 250, a rotary member 260, and a fixed mem-

ber 270. Ribs of the door supporting frame 220 may be spaced at intervals of 55 mm to 65 mm. The opening and closing of the door may be controlled by means of the rotary member 260 and the fixed member 270.

[0023] The door fastening members 230 may be placed at opposite ends of the fence door 200, and may be fastened to fence guards with bolts through a plurality of drilled holes disposed on them. That is, the fence door 200 may be securely fastened in place without using joints, as the door fastening members 230 are vertically placed at opposite ends, unlike conventional fence doors. The present disclosure gives a better aesthetic appearance by allowing for fastening using the door fastening members 230, and enables low-cost production and easy quality control because no mold is needed.

[0024] FIG. 5 is a view showing a corner fastening member according to an embodiment of the present disclosure.

[0025] Referring to (a) to (c) of FIG. 5, the corner fastening member 300 may be 580 mm to 620 mm in length. The corner fastening member 300 may have a plurality of first drilled holes 301 to 311 and be fastened to a first fence guard with fasteners. One side of the corner fastening member may be curved and have a curvature R of 15R.

[0026] The first drilled holes 301 to 311 include six drilled holes. The height h1 of a (1-1)th drilled hole 301 may be 25 mm to 26 mm, the height h2 of a (1-2)th drilled hole 302 may be 135 mm to 136 mm, the height h3 of a (1-3)th drilled hole 305 may be 245 mm to 246 mm, the height h4 of a (1-4)th drilled hole 307 may be 355 mm to 356 mm, the height h5 of a (1-5)th drilled hole 309 may be 465 mm to 466 mm, and the height h6 of a (1-6)th drilled hole 311 may be 554 mm to 555 mm. In the present disclosure, the height of a base may be adjusted when the prefabricated fence is transformed into a closet using the first drilled holes 301 to 311, the height of a top may be adjusted when the prefabricated fence is transformed into a desk using the (1-2)th drilled hole 303 to (1-6)th drilled hole 311, and the height may be adjusted when the prefabricated fence is transformed into a sofa or bed using the (1-2)th drilled hole 303 and the (1-3)th drilled hole 305. In this case, the positions and number of drilled holes are not limited.

[0027] The corner fastening member 300 may have a plurality of second drilled holes 320 adjacent to the first drilled holes and be fastened to a second fence guard with fasteners. The first fence guard and the second fence guard may be vertically fastened together. The first drilled holes may be spaced at intervals of 85 mm to 95 mm, and the second drilled holes may be spaced at intervals of 380 mm to 400 mm.

[0028] The corner fastening member 300 may fasten the first fence guard and the second fence guard together, and its horizontal width W may allow a space of 26 mm to 30 mm. This space will allow enough room to fit a baby playmat placed in the inside space of the prefabricated fence, even if the baby playmat expands. More-

over, the corner fastening member 300 allows for height adjustment when the prefabricated fence is transformed into an infant bed.

[0029] FIGS. 6 and 7 are views showing a bed corner fastening member and an infant bed, respectively, according to an embodiment of the present disclosure.

[0030] Referring to (a) and (b) of FIG. 6, the bed corner fastening member 500 may range from 780 mm to 820 mm in height. The bed corner fastening member 500 has a wheel 501 at the bottom to facilitate movement and a plurality of drilled holes 503 to 507.

[0031] The height h7 of a (3-1)th drilled hole 503 may be 225 mm to 226 mm, the height h8 of a (3-2)th drilled hole 505 may be 335 mm to 336 mm, and the height h9 of a (3-3)th drilled hole 507 may be 445 mm to 446 mm. In this case, the positions and number of drilled holes are not limited. Referring to FIG. 7, the height of a mattress base may be adjusted when the prefabricated fence is transformed into an infant bed 600 using the plurality of drilled holes 503 to 507.

[0032] FIGS. 8 to 10 are views showing a prefabricated fence with fixing bands connected to it according to an embodiment of the present disclosure.

[0033] Referring to FIGS. 8 to 10, fixing bands may be attached in various patterns to securely hold an assembled, prefabricated fence in place. The fixing bands 400a and 400b may fix opposing fence doors together. In this case, the fixing bands 400a and 400b may be bound to the bottoms of the guard fastening members 130 fastening the fence doors. The first fixing bands 400a and second fixing bands 400b in FIG. 8 may lie perpendicular to each other. As shown in FIG. 9, the second fixing bands 400b and third fixing bands 400c may lie diagonally, with the first fixing bands 400a in the middle therebetween. As shown in FIG. 10, the first fixing bands 400a and the second fixing bands 400b may lie perpendicular to each other, and the third fixing bands 400c and fourth fixing bands 400d may lie diagonally, with the first fixing bands 400a in the middle therebetween. Depending on embodiments, the fixing bands may be connected in a variety of other patterns, other than those shown in FIGS. 8 to 10 used to connect the fixing bands, thereby securely holding the prefabricated fence in place.

[0034] FIGS. 11 to 15 are views of how a prefabricated fence is transformed according to another embodiment of the present disclosure.

[0035] Referring to FIG. 11, the prefabricated fence may be transformed into an infant bed 20 by connecting a plurality of fence guards vertically and horizontally and adding wheels to the bottoms thereof.

[0036] Referring to FIG. 12, the prefabricated fence may be transformed into a bed guard 20a by connecting a plurality of fence guards vertically and horizontally.

[0037] Referring to FIG. 13, the prefabricated fence may be transformed into a sofa 30 by connecting a plurality of fence guards vertically and horizontally and constructing a base and a sofa mattress at a middle portion.

[0038] Referring to FIG. 14, the prefabricated fence

may be transformed into a desk 40 by connecting a plurality of fence guards vertically and horizontally and constructing a base at a middle portion and a supporting member at the bottom.

[0039] Referring to FIG. 15, the prefabricated fence may be transformed into a bed 50 by connecting a plurality of fence guards vertically and horizontally and placing a base and a sofa mattress at a middle portion.

[0040] According to the present disclosure, the prefabricated fence ensures secure fastening without using joints by means of guard fastening members at opposite ends of a fence guard and a corner fastening member placed in a corner region.

[0041] Furthermore, the prefabricated fence prevents injuries or accidents by means of a rounded corner fastening member in a corner region.

[0042] Furthermore, the prefabricated fence can transform into an infant bed, a bed guard, etc. as a child grows, using a plurality of drilled holes at different positions on the corner fastening member, and this may lengthen the duration of use.

[0043] Although the present disclosure has been described with reference to the embodiment illustrated in the drawings, the embodiment is merely illustrative, and those skilled in the art would appreciate that various modifications and other equivalent embodiments are possible. Therefore, the true technical scope of protection of the present disclosure should be defined by the appended claims.

Claims

1. A transformable prefabricated fence comprising:

a plurality of fence guards; a fence door placed between the plurality of fence guards; and a corner fastening member placed in a corner region to fasten the fence guards together or fasten the fence guards and the fence door, wherein one side of the corner fastening member is curved, wherein the corner fastening member has a plurality of first drilled holes and is fastened to a first fence guard with fasteners, the corner fastening member is fastened to a second fence guard using a plurality of second drilled holes adjacent to the first drilled holes, and the first fence guard and the second fence guard are vertically placed.

2. The transformable prefabricated fence of claim 1, wherein the corner fastening member has a curvature of 15R.

3. The transformable prefabricated fence of claim 1 or 2, wherein the fence guards each comprise a guard upper frame, a guard supporting frame, guard fas-

tening members, and a guard lower frame,
wherein the guard fastening members are placed at
opposite ends of the fence guard.

4. The transformable prefabricated fence of claim 3, 5
wherein the guard fastening members are fastened
to other fence guards with bolts through a plurality
of drilled holes disposed thereon.
5. The transformable prefabricated fence of any one of 10
claims 1 to 4, wherein a rubber pad for preventing
slippage is placed at the bottoms of the fence guards
and fence door.
6. The transformable prefabricated fence of any one of 15
claims 1 to 5, wherein the fence guards and the fence
door are made of a hardwood with a low shrink-swell
rate.
7. The transformable prefabricated fence of any one of 20
claims 1 to 6, further comprising a baby playmat
placed in an inside space formed by fastening the
fence guards and the fence door together.

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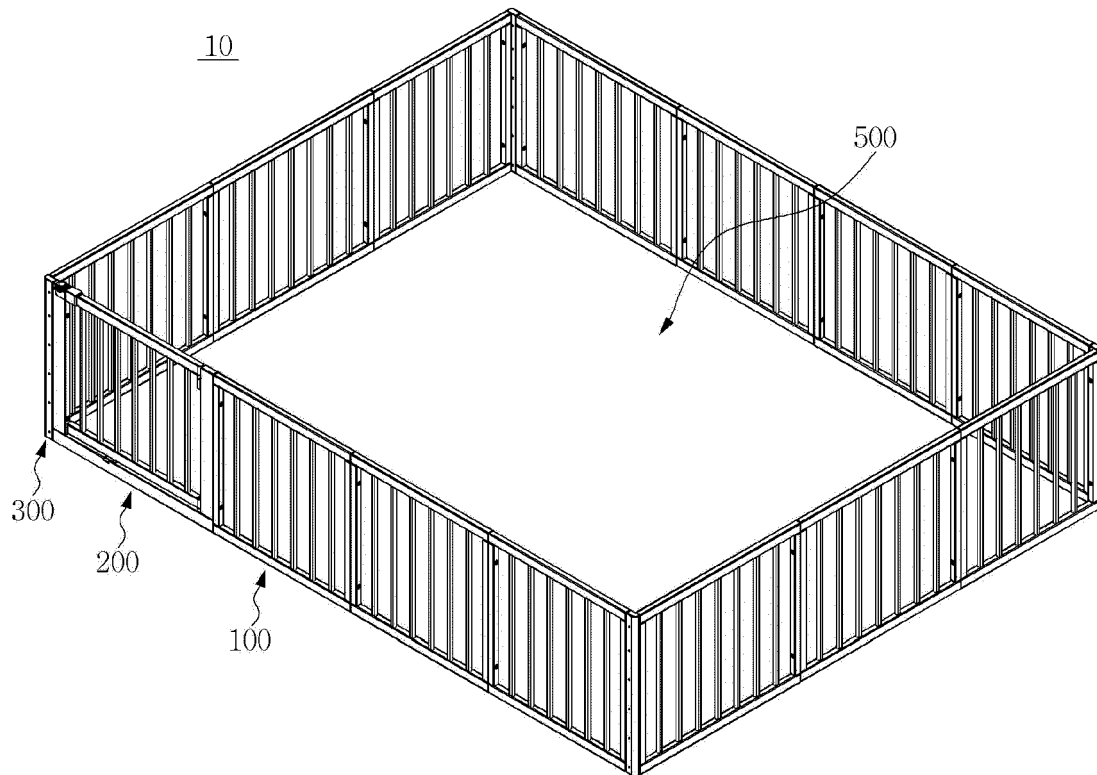
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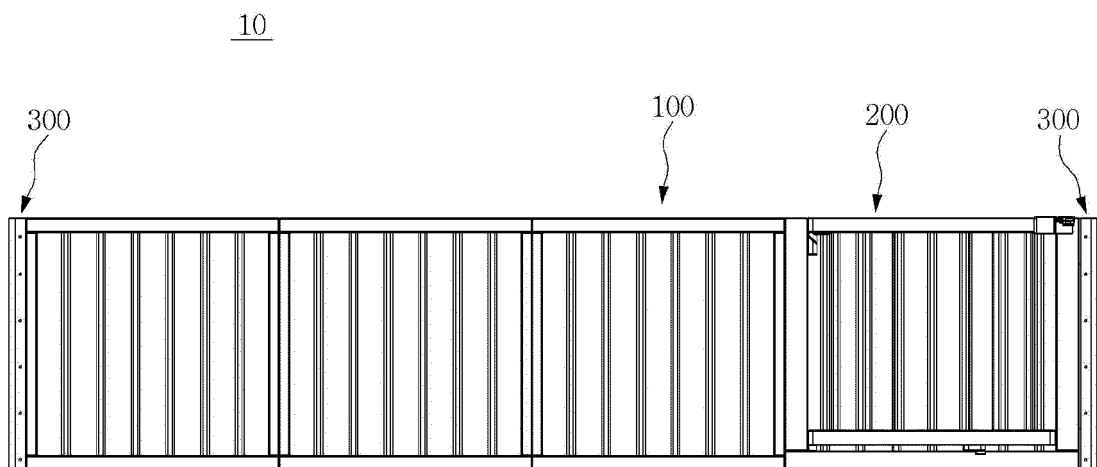
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【Fig.1】

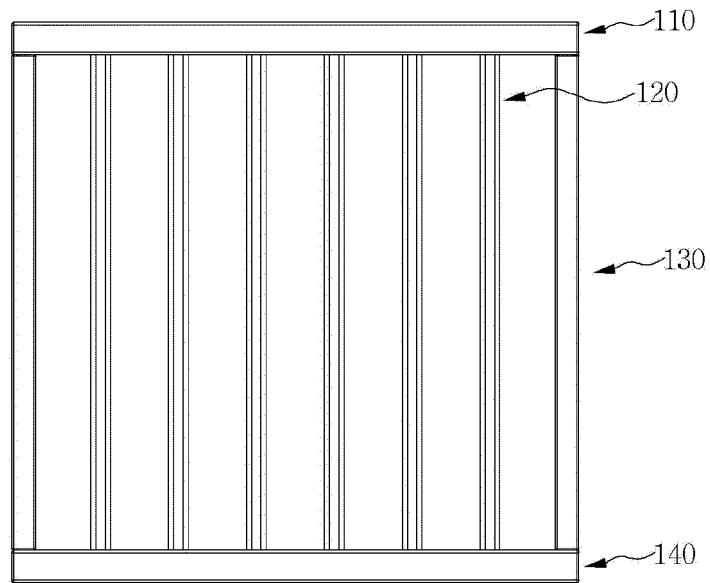


【Fig.2】



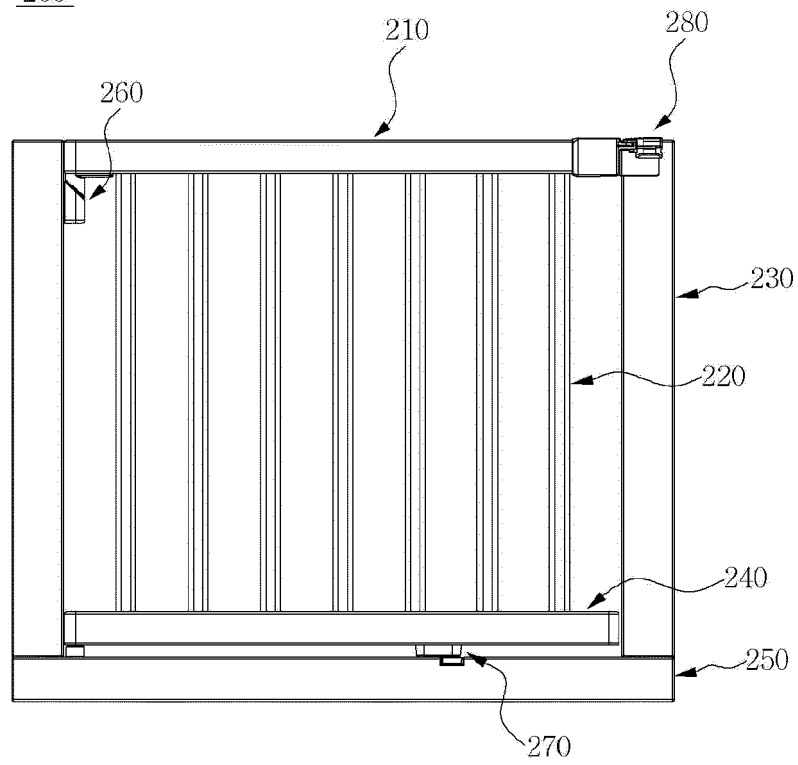
【Fig.3】

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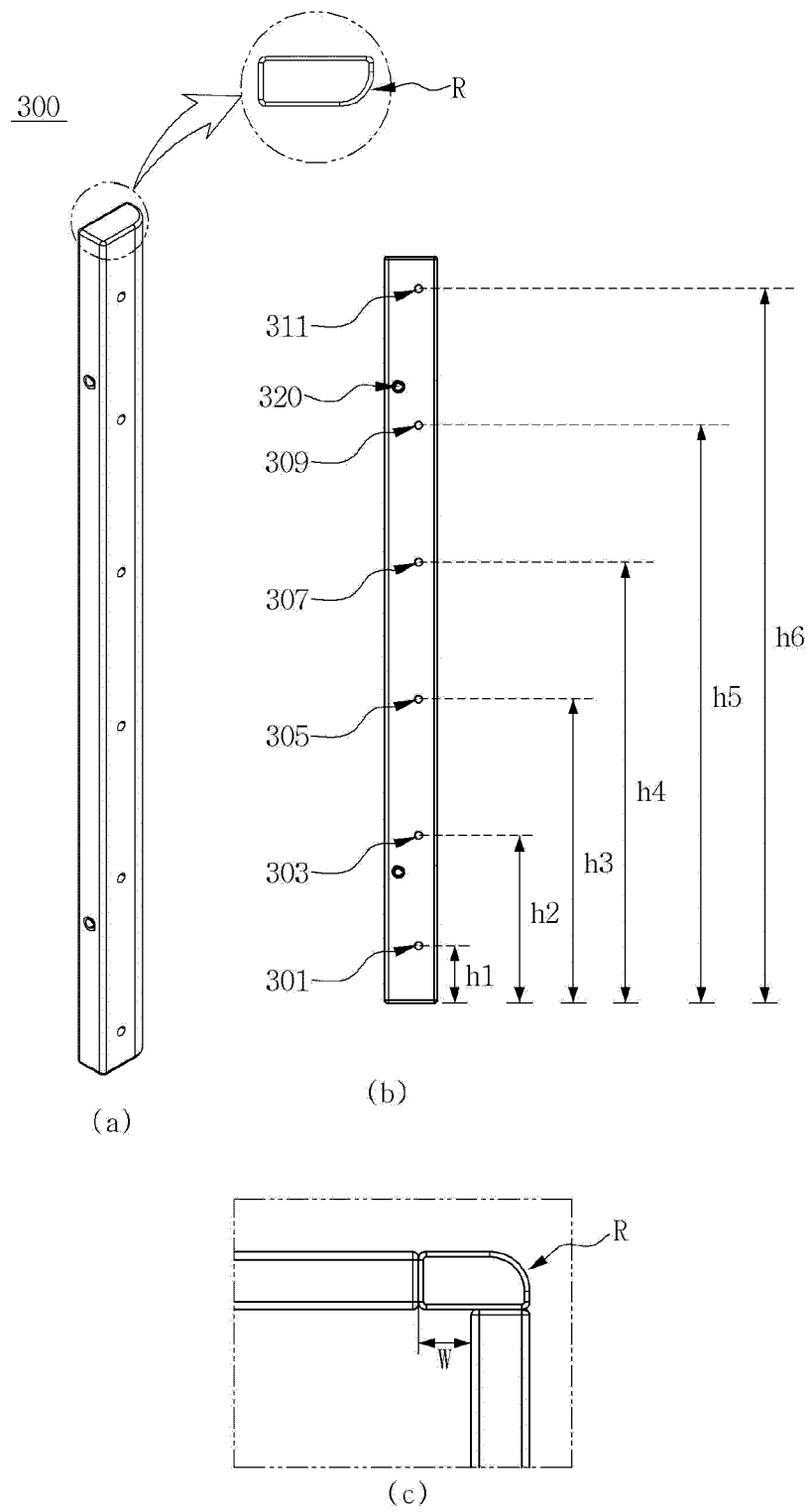


【Fig.4】

200

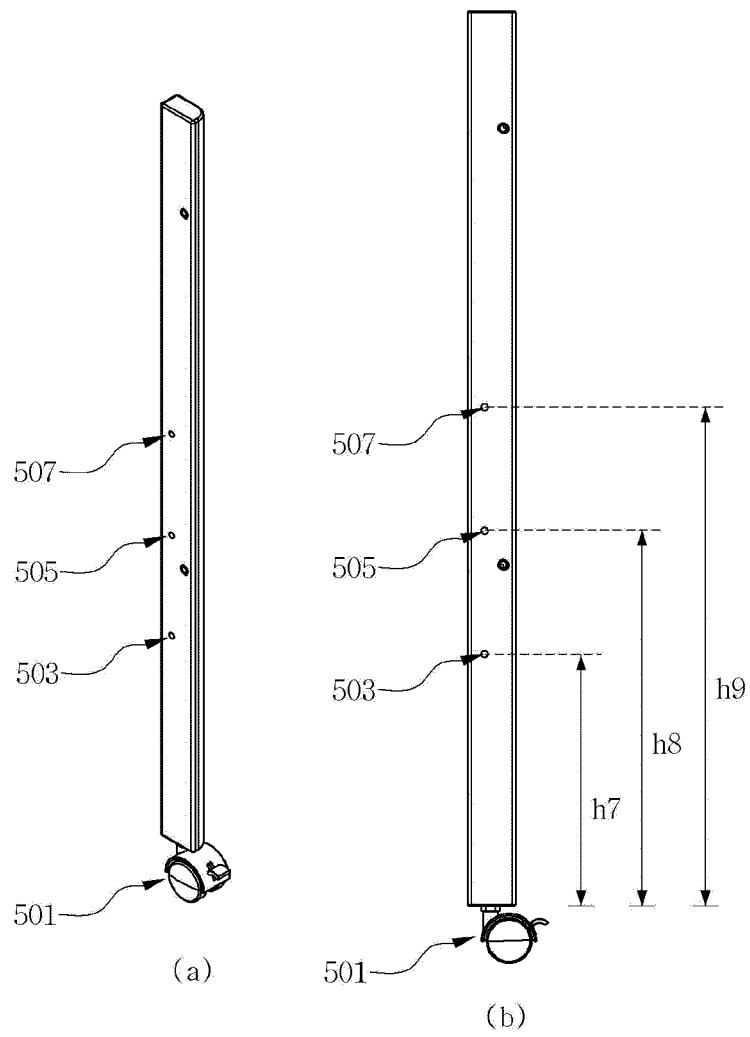


【Fig.5】

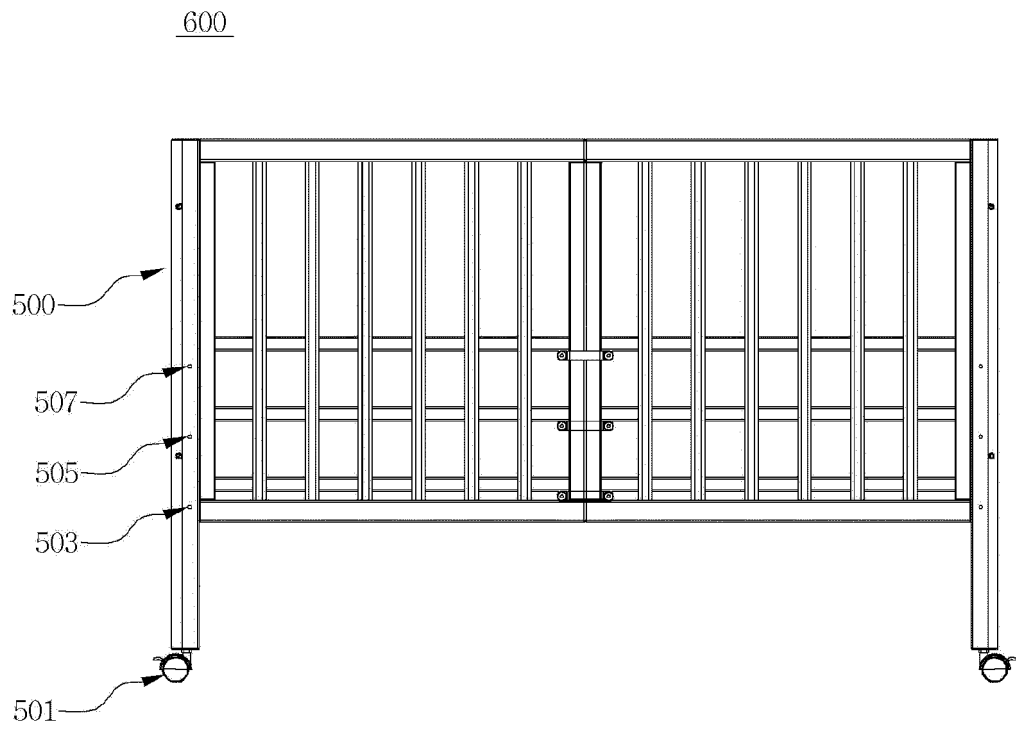


【Fig.6】

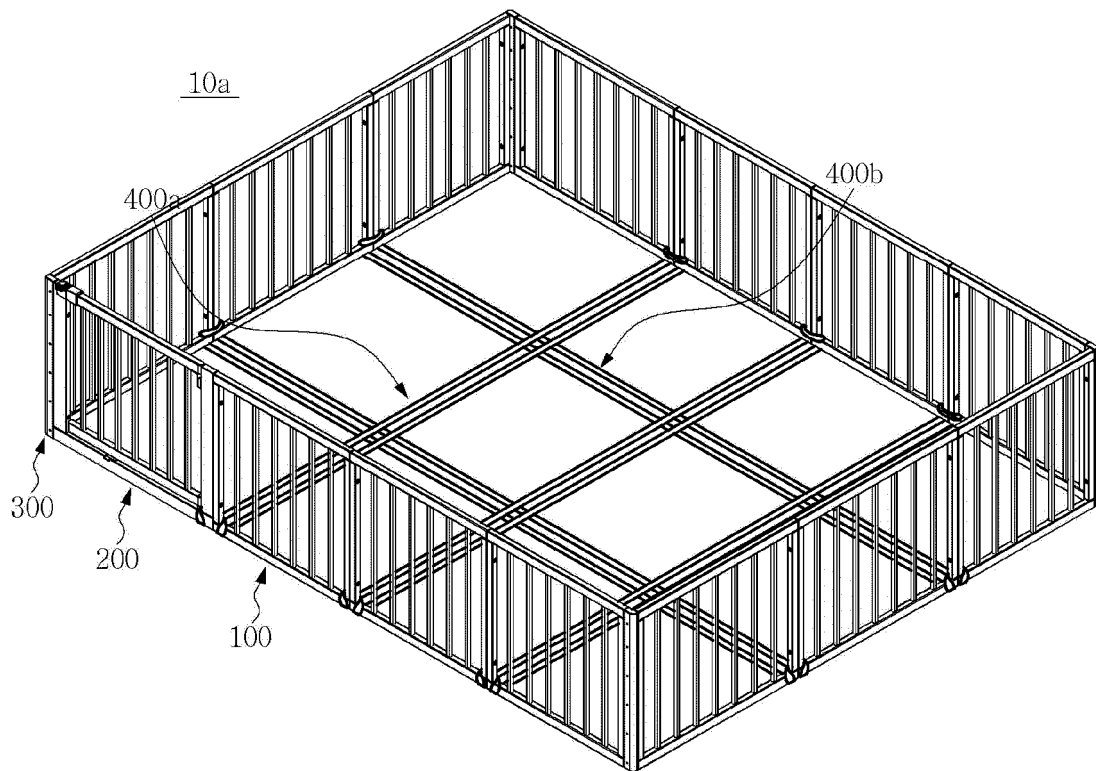
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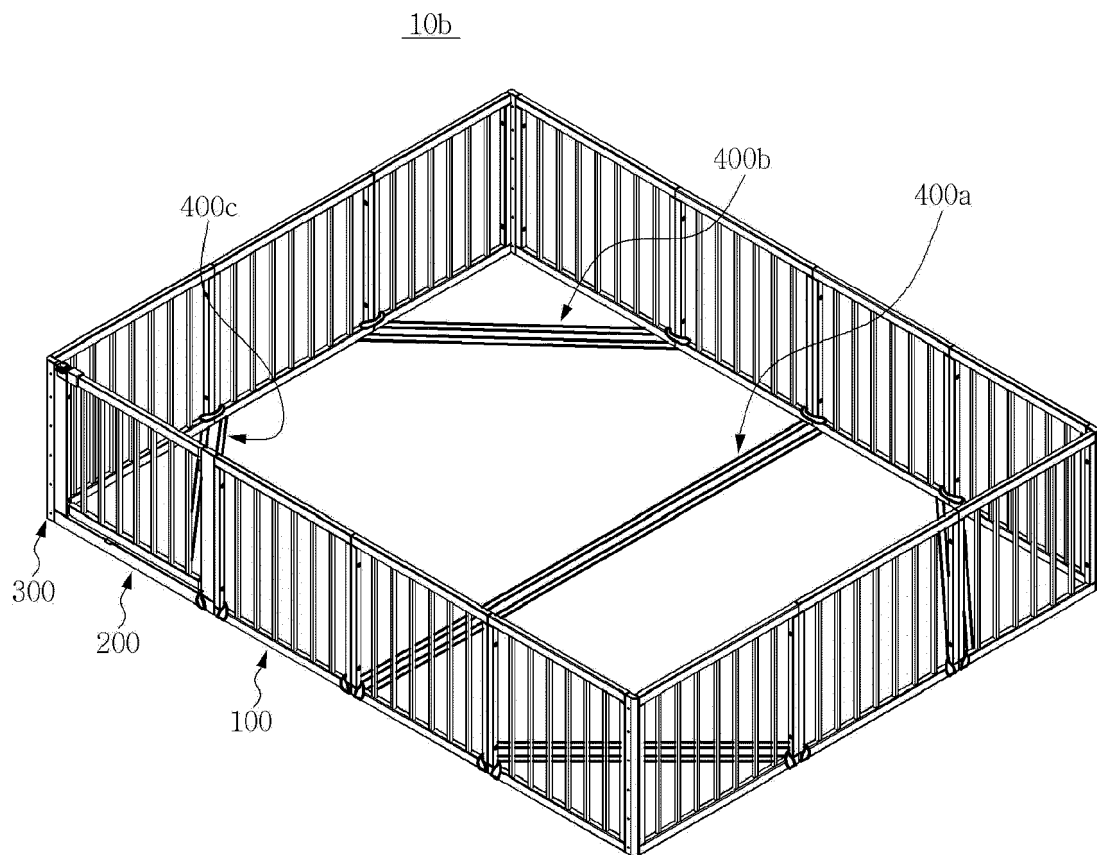
【Fig.7】



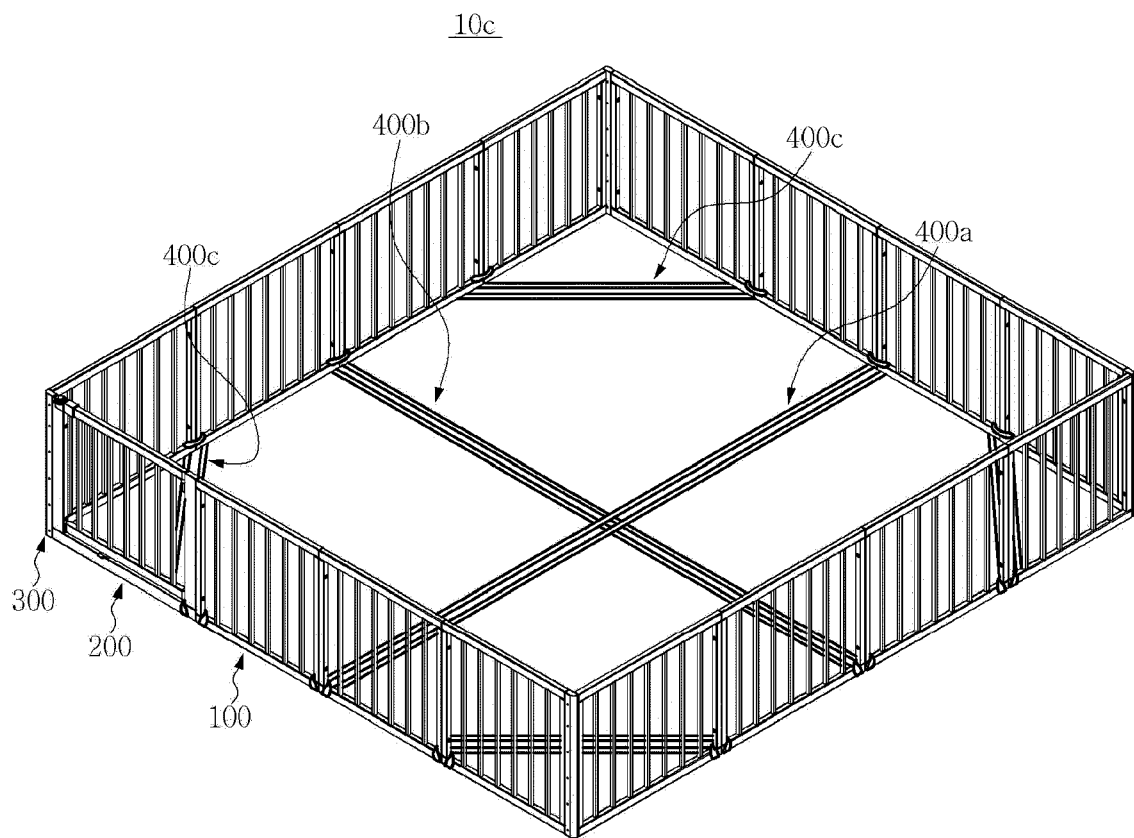
【Fig.8】



【Fig.9】

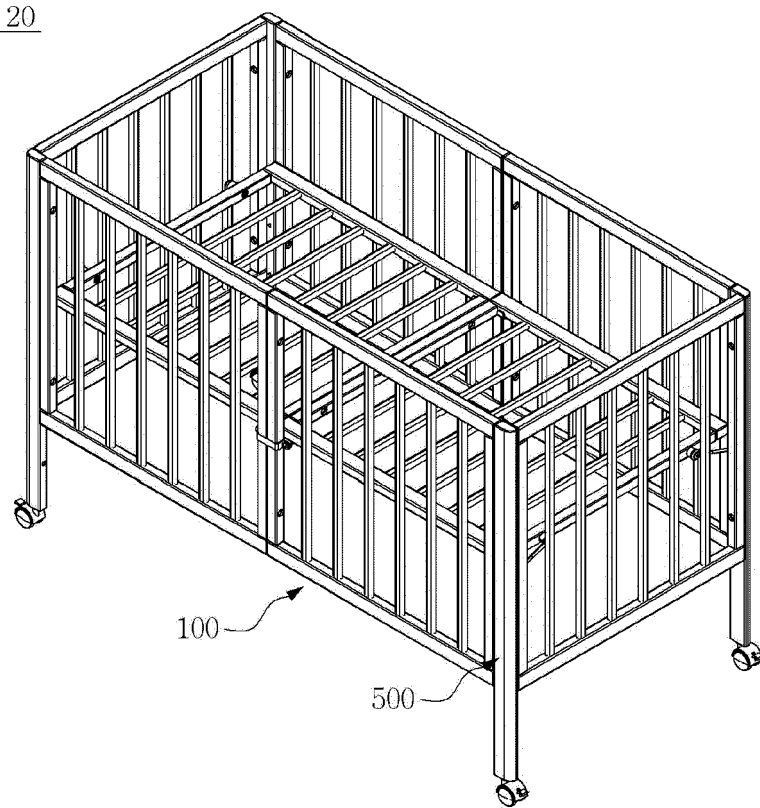


【Fig.10】



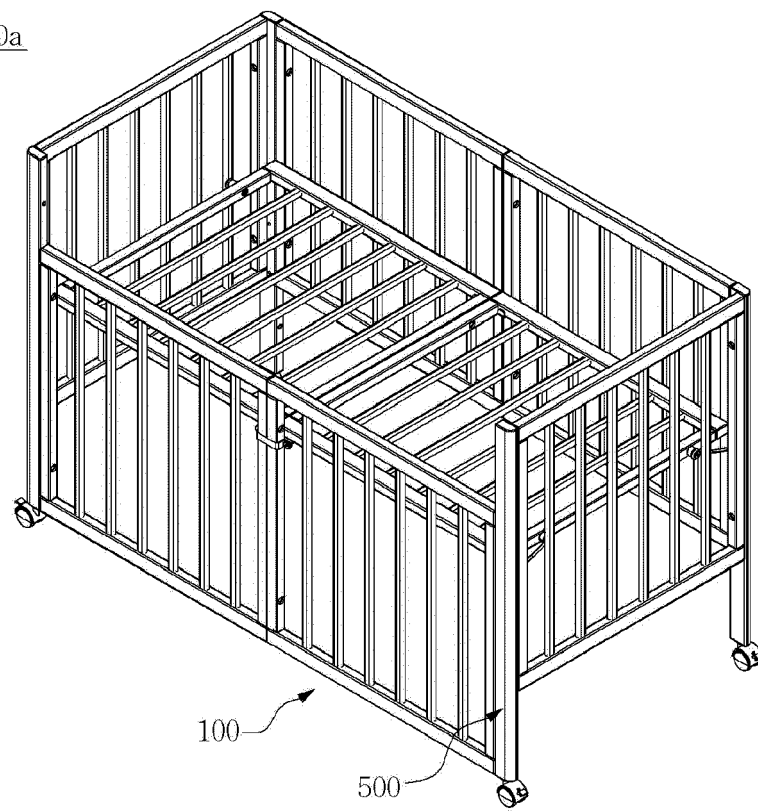
【Fig.11】

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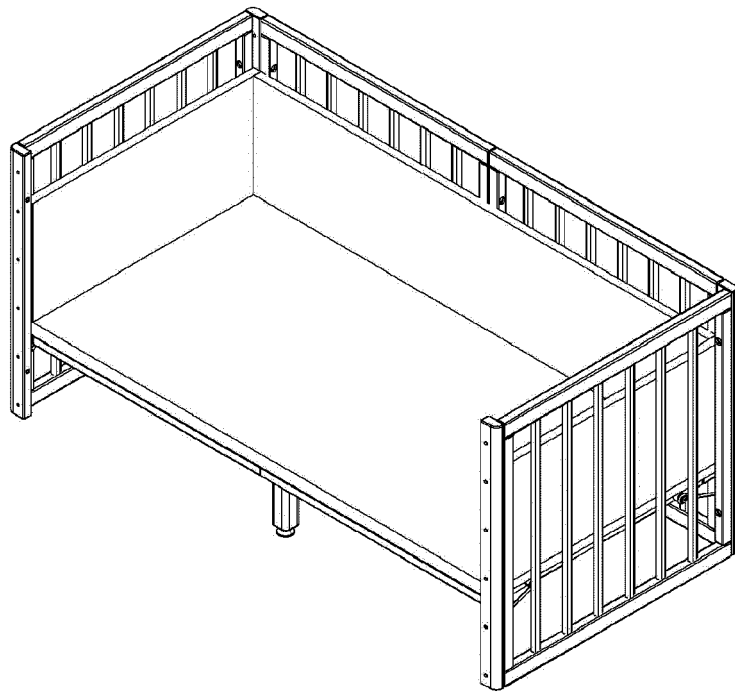
【Fig.12】

20a



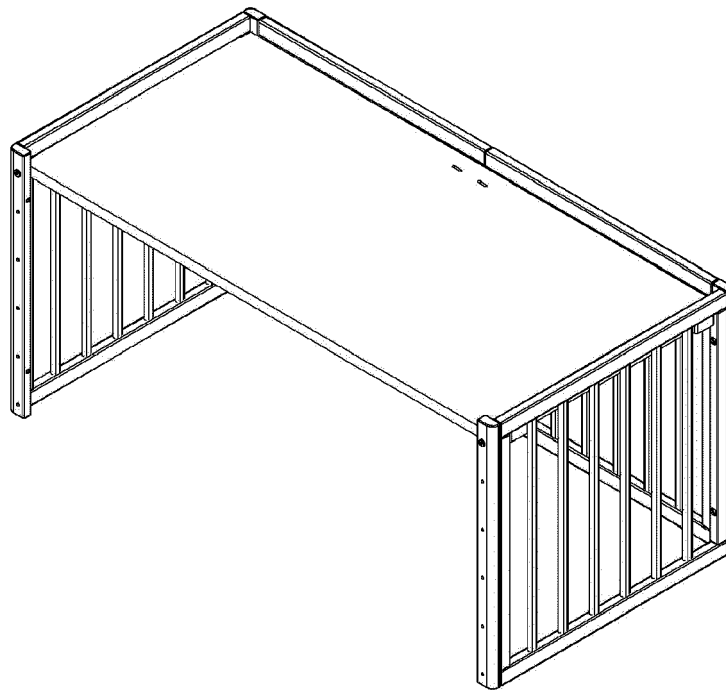
【Fig.13】

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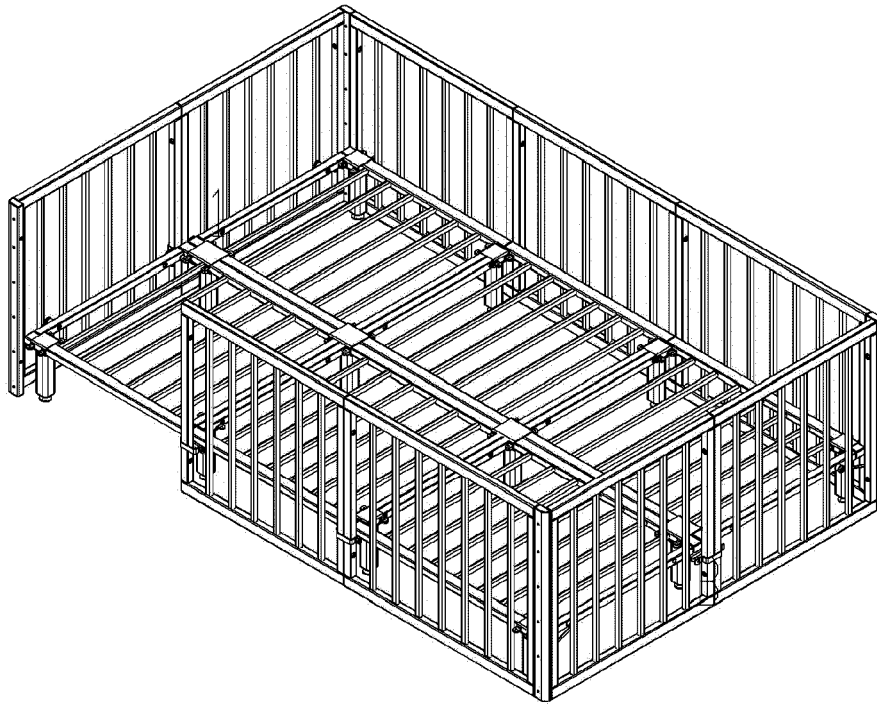
【Fig.14】

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【Fig.15】

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EUROPEAN SEARCH REPORT

 Application Number
 EP 21 18 7087

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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	KR 200 416 201 Y1 (LEE) 12 May 2006 (2006-05-12) * the whole document *	1-7	INV. E04H17/16 A47D13/06 E04H17/20
X	US 5 494 261 A (GANDARA ENRIQUE P [US]) 27 February 1996 (1996-02-27) * column 3, line 52 - column 6, line 62; figures 1, 4 *	1-7	
X	US 2004/140461 A1 (LAPPEN ALAN RICK [US]) 22 July 2004 (2004-07-22) * figure 1 * * paragraph [0038] - paragraph [0040] * * paragraph [0043] *	1-7	
			TECHNICAL FIELDS SEARCHED (IPC)
			E04H A47D
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 29 November 2021	Examiner Valenta, Ivar
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 21 18 7087

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The members are as contained in the European Patent Office EDP file on
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29-11-2021

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REFERENCES CITED IN THE DESCRIPTION

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