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(54) **CHILD PLAY STRUCTURE**

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**EP 3 229 932 B1**

## Description

**[0001]** The current invention relates to a child play structure. According to the current invention, the term "child play structure" should be understood as a structure which is specifically designed to promote children's playing activity. It should be noted that there are many structures with which children could play, for example desks, cupboards, office dividers, etc. However these structures are not specifically designed to promote children's playing activity. Some example characteristics which characterize a child play structure would be bright colours, play activity elements attached to the structure, pictures, colourful artwork, etc.

**[0002]** While this definition is quite functional, it is maintained that a person skilled in the art of Early Childhood Education will be able to clearly identify a structure which is specifically designed to promote children's playing activity.

**[0003]** Furthermore, the term "structure" should be understood as a physical assembly of components which has an overall size and shape so that a typical child can get the feeling of playing "in" the assembly. In general a child play structure will have a length greater than 58cm, a width greater than 58cm and a height greater than 58cm. In another embodiment for older children, the child play structure will have a length greater than 80cm, a width greater than 80cm and a height greater than 80cm. It should be noted that diverse structures are known in the prior art which are much smaller, see for example US 2006/0199467. These structures share some of the features of the current invention, but are designed for a completely different purpose. The currently mentioned size ranges are important to give the child a feeling of playing "in" the structure. The prior art documents are toys and are not structures which are designed for playing "inside".

**[0004]** In one main embodiment of the invention, the play structure is suitable for outdoor use and is made from materials which can be left outside without deteriorating. By arranging the structure for outdoor use, demands are also placed on the strength and stability of the structure. However, in other embodiments, the structure could also be used purely inside or in combination between inside and outside use.

## Description of related art

**[0005]** Prior art child play structures are typically large complex structures with many different areas to play in. Some examples are given in US7975437, USD515166, USD361614, US5226864 and US 2013/0072314. Such large structures are costly to acquire, complex to set up and many times too large to appeal to smaller children.

**[0006]** Other prior art child play structures are smaller structures which are cheaper to acquire and less complicated to setup. Furthermore, they often times appeal more to small children. Some examples are given in US2004002394, US6383084, USD544926 and

USD334610. However, these simple child play structures are most often formed as rectangular structures with fully enclosed internal areas in which the children can play. Such structures are often difficult to supervise since they have fully enclosed areas. Furthermore, such structures usually require at least four panel elements to generate the enclosed space.

**[0007]** Other structures are available which are easier to supervise and which have fewer than four panels, see for example US6066022. However, the currently available structures are still complex and require many components. Furthermore, the available structures are not suitable for real interaction with children because they could collapse if used incorrectly. They are more suitable for indoor play corners or protected environments.

**[0008]** Other prior art structures are built up of frame elements instead of plates. This does not give the same feeling of playing inside the structure and is not as strong or as stable. One example of such a structure is shown in FR 2 759 921. KR101361469B1 discloses an example of a child play structure comprising a main plate, a first side plate and a second side plate, the main plate being arranged at an angle of less than 20 degrees to the vertical, the first side plate being arranged at an angle of less than 20 degrees to the vertical, and the second side plate being arranged at an angle of less than 20 degrees to the vertical, wherein said first side plate is fastened to the main plate in such a way that the first side plate forms a fixed angle to the main plate of 90 degrees, at least 30% of the max length of the first side plate extends past each side of the main plate, and the second side plate forms a fixed angle to the main plate of 90 degrees.

## Summary of the invention

**[0009]** It is therefore an object of the current invention to provide a new type of child play structure which is easy to supervise, gives children the feeling of being in an enclosed room, reduces material usage and is structurally stable so that it does not collapse.

**[0010]** This object is provided by a child play structure according to claim 1. Claim 8 is directed to a kit comprising a main plate, a first side plate and a second side plate to be assembled into a child play structure according to any of claims 1-7. Claim 9 defines a method of manufacturing a child play structure according to any of claims 1-7.

**[0011]** In this way a child play structure is provided which maximizes the play value of the structure while decreasing the number of plates necessary in the construction. Furthermore a structure is provided which is easy to supervise and is very stable.

**[0012]** It should be noted that according to this specification the term "plate" should be understood as an element which is essentially planar and has a length and a height which are both much greater than its thickness. In general, when erected, the length dimension is referred to as the X direction and is arranged horizontally and the height dimension is referred to as the Y direction

and is typically arranged essentially vertically unless otherwise noted. In one embodiment, the thickness of the plate is at least 1cm, in another embodiment at least 1,25cm and in another embodiment at least 1,5cm. Furthermore, it should be noted that according to this specification, the term "plate" should be understood as an element which has a surface area which is greater than 20%, greater than 30% greater than 40%, or greater than 50% of its plate area. In other words, there is a difference between a frame and a plate. Typically, a plate according to the current invention is cut out of rectangular sheet material, for example a plywood sheet. The term "plate area" should be understood as the area defined by the max length times the max height of the plate.

**[0013]** It should also be noted that the term "max length" should be understood in the current specification as referring to the maximum horizontal dimension from one side edge of the plate to the other side edge of the plate in the plane of the plate. Likewise the term max height should be understood as the maximum vertical dimension of the plate from one lower side edge to one upper side edge measured in the plane of the plate. For example, if the side edges of the plate are not straight and parallel, then the max length of the plate is the horizontal component (X-component) of the vector connecting the point located most to the left on the left side edge of the plate and the point located most to the right on the right side edge of the plate. Likewise the max height is the vertical component (Y-component) of the vector connecting the lowermost point on the lower side edge and the upper most point on the upper side edge of the plate. If the plate is not arranged vertically, then the max height is the component in the Y direction of the plane of the plate. In this case, the Y component will not be vertical, but will be arranged in the plane of the plate.

**[0014]** It should also be noted that unless otherwise mentioned, when orientations are used in this specification, for example uppermost, lowermost, horizontal, vertical etc, they should be interpreted in the normal use position of the play structure. In general, the play structure will be arranged on a planar support surface and will assume a position similar to the one shown in the figures. The plates will all be arranged within 20 degrees to a normal vector to the planar support surface. The horizontal or X direction will therefore be parallel to the support surface while the vertical direction will be parallel to the normal vector to the support surface.

**[0015]** It should also be noted that the main plate is fastened to the side plate such that the side plate forms a fixed angle to the main plate. By "fixed angle" is meant that the angle of the joint between the two plates is fixed and cannot be adjusted accidentally by children or by adults. It is a clear that in order to provide a stable structure for children to play on, the joint needs to be very stable. If the angle is accidentally adjustable then the structure could be set up incorrectly and could then collapse by accident. In one embodiment, tools are needed to disassemble or detach the main plate from the first

side plate.

**[0016]** In one embodiment, the first side plate has a max length which is greater than 50% of the max height of the main plate. In another embodiment, the first side plate has a max length which is greater than 75% of the max height of the main plate. Increasing the length of the side plate increases the stability of the structure. With increasing height of the structure, good stability is ensured by also increasing the length of the first side plate. In most cases, increasing the length of the distance between the points of contact between the side plate and the ground will increase the stability. In one embodiment, the max distance between the points of the contact between the side plate and the ground is more than 50% of the max height of the main plate. In another embodiment said max distance is greater than 75% of the max height of the main plate.

**[0017]** According to the invention the first side plate is fastened to the main plate in such a way that the shortest normal distance or vector from the first side plate to a side edge of the main plate is less than 20% of the max length of the main plate. In this way, the first side plate is joined to the main side plate near the side edge of the main plate. This ensures that a large surface area is available on the main plate. By normal distance or vector is meant a vector which is normal to the first side plate and points from the surface of the first side plate to the side edge of the main plate.

**[0018]** According to the invention the child play structure further comprises a second side plate having a max length greater than 40cm and a max height greater than 40 cm and being arranged at an angle of less than 20 degrees to the vertical, wherein said second side plate is fastened to the main plate in such a way that the second side plate forms a fixed angle to the main plate of between 60 and 90 degrees, and that the shortest normal distance from the second side plate to a side edge of the main plate opposite to the side edge of the main plate which is closest to the first side plate is less than 20% of the max length of the main plate. In this way, a structure is provided which has at least three plates. This second side plate can be smaller than the first side plate if desired since the main stability is provided by the main plate and the first side plate.

**[0019]** In one further embodiment of a structure comprising at least three plates, at least 20% of the max length of the second side plate extends past each side of the main plate. In this way, an H structure is provided with at least four inside corners. This provides a child play structure with a lot of play value with a reduced number of required plates.

**[0020]** In another embodiment, the first side plate is attached to a first side edge of the main plate and/or a/the second side plate is attached to a second side edge of the main plate. In this way, a rather simple structure is provided where a main plate is provided with two side plates each attached to one side edge of the main plate.

**[0021]** According to the invention the max length x max

height of the main plate represents a plate area of A1 and the max length x max height of the first side plate represents a plate area of A2 and in that A1 is greater than 80% of twice A2 and less than 120% of twice A2. In this way, the dimensions have been chosen to maximize the material usage of the plates. Typically plates are available in a standard size and by choosing the dimensions of the plates properly, one can save a lot of material. Likewise material can also be saved in a structure comprising at least three plates, with an embodiment where the max length x max height of the main plate represents a plate area of A1 and the max length x max height of the second side plate represents a plate area of A3 and in that A1 is greater than 80% of four times A3 and less than 120% of four times A3.

**[0022]** In the previously mentioned embodiments, the play structure comprised at least two plates or at least three plates. However in one embodiment, the main plate structure of the child play structure consists of a main plate and a first side plate. In another embodiment, the main plate structure of the child play structure consists of a main plate, a first side plate and a second side plate. It should be noted that by "the main plate structure of the child play structure" is meant the structure which provides the main surface area of the structure. Typically, a number of extra elements which could comprise additional plate elements of smaller dimensions could be connected to the main plate structure. However, the person skilled in the art should be able to understand that there is a main plate structure which forms the frame/foundation of the play structure and then additional elements which are attached to the frame/foundation.

**[0023]** In another embodiment of the invention, the plates of the main plate structure of the play structure are arranged such that the structure does not comprise any enclosed space large enough for a child to get inside. In this way, the structure is easier to supervise since the children cannot get into any locations which are completely hidden from supervision.

**[0024]** In one embodiment, the child play structure further comprises a corner strengthening element arranged at a corner between the main plate and the first side plate. In this way, additional strength can be provided at the corners to provide an even more stable and strong structure. In one embodiment, the corner strengthening element is a shelf. By shelf is meant a typically horizontally arranged plate with an area which is large enough to place objects on.

**[0025]** The invention also relates to a kit comprising a main plate and a first side plate, said kit being arranged to be assembled into a child play structure as described in one of the embodiments above. Since the main structure is comprised of two plates, the kit can be packaged in a flat box which is suitable for easy storage and shipping.

**[0026]** The invention also relates to a method of manufacturing a child play structure as described in one or more of the embodiments described above. The method

comprising the steps of:

- providing a first plate having an area A,
- cutting a first main plate out of the area A,
- providing a second plate having an area A,
- cutting a second main plate out of the area A,
- providing a third plate having an area A,
- cutting two first side plates out of the area A,
- packaging the first main plate and one first side plate together and
- packaging the second main plate and the other first side plate together.

**[0027]** In this way, the waste material produced when manufacturing the structure is reduced. Likewise the usage of the plate material is maximized. In another embodiment of the invention, the method further comprises the steps of: providing a third plate having an area A and cutting four second side plates out of the area A and then packaging one of the four second side plates with the first main plate and then packaging another one of the four second side plates with the second main plate.

**[0028]** It should be emphasized that the term "comprises/comprising/comprised of" when used in this specification is taken to specify the presence of stated features, integers, steps or components but does not preclude the presence or addition of one or more other features, integers, steps, components or groups thereof.

#### Brief description of the drawings

**[0029]** In the following, the invention will be described in greater detail with reference to embodiments shown by the enclosed figures. It should be emphasized that the embodiments shown are used for example purposes only and should not be used to limit the scope of the invention.

Figure 1 shows a front top side perspective view of a first embodiment of a child play structure according to the invention.

Figure 2 shows a rear top side perspective view of the child play structure of figure 1 showing more details.

Figure 3 shows a perspective view of a second embodiment of a child play structure according to the invention.

Figures 4 and 5 show different perspective detail views of the fastening means used to attach the plates together.

Figure 6 shows a front top side perspective view of a third embodiment of a child play structure according to the invention.

### Detailed description of the embodiments

**[0030]** Figures 1 and 2 show a first embodiment 1 of a child play structure. The structure comprises a main plate 2, a first side plate 3 and a second side plate 4. Each plate of the current embodiment is formed/cut from a plate or sheet material which is suitable for outdoor use. In one example, the plate material is a recycled plastic material. In another embodiment, the plate material is plywood covered with a layer of paint. In another embodiment, the plate material is a sandwich construction with a thick inner layer of recycled plastic and two thinner outer layers of a colourful plastic material with a good surface finish. Other suitable choices of material will be available to the person skilled in the art.

**[0031]** Each plate is cut or otherwise formed into a particular shape. The shape can be chosen to represent different themes or situations. In one example, the plates are cut into a shape which represents the outline of a building. In another example, the plates are cut into an interesting geometric shape. In general, the three plates which make up the structure of the current embodiment can be chosen to represent a certain theme. In one example, the theme could be a workshop. In another example, the theme could be a house. The person skilled in the art of Early Childhood Education will be able to provide many examples of suitable outlines and themes. It could be said that the outline of the main plate, the first side plate and/or the second side plate can be provided with an outline which is play inspiring.

**[0032]** Each plate has a maximum (max) length (L1, L2) and a maximum (max) height (H1, H2). In the current embodiment the max length is the largest dimension along the horizontal axis of the plate when the structure is erected. The max height in the current embodiment is the largest dimension along the vertical axis of the plate when the structure is erected.

**[0033]** The product of the max length and the max height give a figure which can be termed the "maximum rectangular plate area". When cutting a main or side plate, it is necessary to provide a raw plate having an area which is equal to or larger than the "maximum rectangular plate area" of the desired main or side plate. In the embodiment shown, the main plate 2 has a max length of 1196 mm and a max height of 1196 mm. The first side plate has a max length of 1196 mm and a max height of 586 mm. The second side plate has a max length of 586 mm and a max height of 586 mm.

**[0034]** The current embodiment's dimensions are chosen to optimize a standardly available plate size. In this case raw rectangular plates with an outer dimension of 1200 mm x 1200 mm are supplied. The width of the cutting tool in this case is 2 mm, so the main plates maximum dimensions are chosen to be 1196 mm x 1196 mm. Likewise, in order to optimize the material usage of the plates, the dimensions of the first side plate have been chosen so that two first side plates can be cut out of a single standard raw plate size. Similarly, the dimensions of the

second side plate are chosen such that four side plates can be cut out of a single standard plate. In this way, in order to build four child play structures according to the invention, only 7 standard sized raw plates are needed.

If the dimensions of the side plates were slightly larger, then it would not be possible to use 7 plates, rather up to 12 plates would be necessary. While these dimensions have been chosen based on optimal material usage, other dimensions are also possible. For example, the second side plate could be similar in size to the first side plate. In this way, only two second side plates could be cut from a standard plate. This would require 9 plates instead of 7. Likewise, by reducing the dimensions of the main plate to less than 58cm in height and/or less than 58cm in width, the number of structures which can be built from a small number of plates can be even further optimized.

**[0035]** As can be seen from the figures, the first side plate 3 is fastened to the side edge of the main plate 2. In the prior art, when joining two plates in a child play structure, the plates are usually joined edge to edge. In this way an L shape is formed. However, in the current embodiment, the side edge of the main plate is joined to the first side plate close to the middle of the first side plate. In this way, the first side plate and the main side plate form a T shaped structure instead of the typical L shaped structure known from the prior art. The T shaped structure has the benefit that two inside corners are formed with only two plates. Since children like to play in inside corners, maximizing the number of inside corners in an activity structure while reducing material usage is advantageous.

**[0036]** It could also be said that the first side plate is joined to the main plate in such a way that the first side plate extends outwardly from both sides of the main plate. In the current embodiment, the main plate is attached to the first side plate around the middle of the first side plate and therefore the maximum horizontal normal dimension from the main plate to one side edge of the first side plate is approximately equal to the maximum horizontal normal dimension from the main plate to the other side edge of the first side plate. In this case, one could say that the first side plate extends past the main plate by about 50% of the max length of the first side plate.

**[0037]** However, it is not necessary that the first side plate is centred on the main plate. Other dimensions could also be imagined. Two non-limiting examples are a 70% / 30% spread and a 60% / 40% spread. However, in order to achieve the advantage of the two inside corners, a certain extension is necessary. In the claims it is therefore defined that the first side plate has to extend from the main plate at least 30% of the max length of the first side plate.

**[0038]** Similarly, in the current embodiment, the second side plate 4 is also attached to a side edge of the main plate such that the second side plate extends from both sides of the main plate. In the current embodiment, the second side plate is also attached in the middle of

the second side plate as with the first side plate. But this is not necessary for the second plate. In fact, in one embodiment (not shown), the second side plate could be attached at its edge to the side edge of the main plate. In this way, the second side plate and the main plate form an L shape.

**[0039]** As can be seen from the figures, in the current embodiment, the overall structure has an H shape. In this way two separate rectangular areas are defined. One side edge of each of the rectangular areas is fully open which allows free and unencumbered viewing of the inside of the enclosures. This allows efficient supervision which is in contrast to a fully enclosed rectangular enclosure where it is difficult to see inside the enclosure. This makes the H shaped structure much more suitable to supervised play of small children when compared to the fully enclosed rectangular structures known in the art.

**[0040]** Furthermore, two semi enclosed areas are provided with the current H shaped structure with only three plates in contrast to a fully enclosed structure which provides only a single room, but with four plates. The play value of the current H shaped structure is therefore much greater for small children while simultaneously requiring less material and thereby lowering the cost.

**[0041]** In the current embodiment, the main plate, the first side plate and the second side plate are all arranged vertically. However, it could also be imagined that the plates were arranged at an angle to the vertical (not shown). For example, the first side plate could be arranged at a 10 degree angle to the vertical so that the first side plate sloped inwardly towards the main plate. Likewise, the main plate or the second side plate could also be arranged slightly angled. For the cases where the plates are angled, the "maximum height" of the plate should be understood as the maximum Y dimension of the plate in the plane of the plate.

**[0042]** Figure 2 shows the same structure as figure 1, but with two additional details. A small circular shelf 5 has been mounted on the first side plate 3. This shelf is just one example of many different extra functional activity elements which could be mounted on the activity structure. Many different examples could be imagined. Some non-limiting examples are clocks, curtains, cupboards, funnels, tubes, etc...

**[0043]** The second detail shown in figure 2 is a rectangular shelf 6 which is added in one of the inside corners of the structure. In the current embodiment, the shelf is added between the second side plate 4 and the main plate 2. This second shelf 6 is advantageously attached to both the second side plate 4 and the main plate 2. Due to this, the shelf 6 adds strength to the structure. In other words, the shelf acts as a corner strengthening element.

**[0044]** Furthermore, in both figures 1 and 2, mounting feet 7 are shown. The mounting feet can be formed in many different ways. In the current embodiment, the mounting feet are fastened to the bottom edge of the plates via a bolt which goes through the foot 7 and the plate 3. Furthermore, each mounting foot is provided with

vertical holes 8 through the foot whereby the foot can be fastened to a surface on which the structure is standing. For example, an earth spike could be inserted through the hole 8 and pounded into the earth underneath the structure. In this way, the structure can be anchored in place as is required in certain safety standards, for example European safety standard EN 1176. In the current embodiment, two vertically arranged holes are provided in each foot, one on each side of the plate. In another embodiment, a foot could be provided with only one vertically arranged hole arranged on one side of the plate. Different forms of anchors are known to the person skilled in the art and won't be discussed further here.

**[0045]** It should also be noted that in the current embodiment, each of the two side plates has two mounting feet. One could also say that in the current embodiment, the two side plates are each supported on the support surface on which the play structure is erected by at least two points. This provides a stable base for the play structure. One could also imagine a structure without any mounting feet, but where the entire bottom edge of the side plates was arranged to stand on the support surface. This is a good solution for the case where the play structure is erected on deformable support surfaces such as sand or grass.

**[0046]** It should also be noted that in order for the activity structure to have a significant value to children, the overall dimensions have to be large enough so that it is possible to give the impression to the children of playing inside the structure. Due to this, a minimum dimension of 58cm x 58cm for small children and 80cm x 80cm for larger children for the main plate have been defined. Dimensions which are much smaller than this would provide a play environment which did not have the same advantages as the current activity structure. In particular, it has been found that the max height of the main plate can advantageously be greater than the typical height of the children playing in the structure. This provides a form of barrier between the two sides of the structure which encourages play through the structure rather than over the structure.

**[0047]** In a beneficial embodiment, openings or holes (not shown) are provided in the main plate which allow children to interact through the main plate. For example, one could provide a door or a window in the main plate through which actions could be taken. A shop environment could be imagined where one side of the structure was the inside of a shop and the other side was the outside of the shop. A window between the two sides would allow interaction between the two sides of the structure. This greatly increases the play value of the structure to children.

**[0048]** The embodiment of an activity structure 20 shown in figure 3 is very similar to the one shown in figures 1 and 2. As with the previous embodiment, this activity structure also comprises a main plate 21, a first side plate 22 and a second side plate 23. As before, the side plates are joined to the main plate along the side edge

of the main plate such that the side plates extend from each side of the main plate. As before an overall H shape is provided. In effect, the only real difference between the first embodiment 1 and the second embodiment 20, is the overall outline of the plates. The overall function and dimensions are very similar between the two embodiments, however, the playing activity inspired by the structure can be different between the two embodiments due to the different theme.

**[0049]** Figure 3 also shows one example of a functional activity element 24. The functional activity element 24 is mounted in a through-going opening 25 formed in the main panel 21. However, in another embodiment, the activity element could also be mounted in or on a side panel 22, 23.

**[0050]** The activity element 24 comprises a set of rollers 26, each roller 26 being arranged to rotate about an axis which is parallel to the plane of the main plate. When an item is positioned on the set of rollers 26 it can be pushed or pulled through the through-going opening 25. Since the rollers 26 are arranged to rotate, the frictional force applied to the item during this movement is insignificant, and therefore the item can be passed through the through-going opening 25 very easily. The activity element is provided with two side plates 27 each being provided with a vertical slot 28 having a width which is equal to the thickness of the main plate. In this way, the activity element can be inserted into the through going opening 25 and then lowered down until the slots 28 engage the main plate 21. The functional activity element shown is just one example of an activity element which can be connected to the activity structure.

**[0051]** Figures 4 and 5 show two different detail views of a shelf 30 which is attached between a second side plate 31 and a main plate 32. As with the previously discussed shelf 8, the current shelf 30 increases the stiffness of the structure at one of the inside corners. In this way, the shelf 30 can be described as a corner stiffening element. Figure 4 shows the shelf attached to the structure while figure 5 shows one embodiment of a mechanism 33,35 used to attach the shelf to the structure. As can be seen the mechanisms used to attach the shelf to the structure in this embodiment are similar to the ones known in the fields of furniture. A bolt 33 is passed through a hole 34 in the plate 31. A nut 35 in the form of an elongated cylinder with an internal thread being formed in a hole which is perpendicular to the longitudinal axis of the elongated cylinder is then placed in a hole 36 formed in the shelf. The bolt engages with the internal thread and the bolt can then be tightened. In the embodiment shown, the elongated cylinder shape of the nut is formed with a non-circular cross section taken through a plane which is perpendicular to the central axis of the elongated cylinder. This ensures that the nut does not rotate in the hole in the shelf which makes alignment between the nut and the bolt easier.

**[0052]** The side plates can also be attached to the main plate in this same manner. However, other forms of at-

taching the plates to each other could also be imagined. For example, angle brackets could be used at the corners to connect the side plates to the main plate.

**[0053]** In another embodiment (not shown), the main plate could be provided with a slot in the lower side of the plate close to the side edge of the main plate. The side plate could be provided with a corresponding slot, but in its upper side. The main plate could thereby be joined to the side plate simply by engaging the slots with each other. The plates could thereafter be further joined together with fastening elements, for example bolts, angle brackets, etc... In this case, the side plate would not be connected directly to the side edge of the main plate, but would be located a distance inwardly from the side edge of the main plate. This can have both advantages and disadvantages. In the embodiments shown in the figures, tools are needed to disassemble the structure. Therefore, there is not risk that children in the playground could accidentally cause the structure to collapse.

**[0054]** Figure 6 shows a third embodiment 40 of an activity structure according to the current invention. In most ways, the third embodiment is very similar to the first and second embodiments and won't be described in great detail here. The third embodiment comprises a main plate 41 and a first side plate 42. In contrast to the other embodiments, the third embodiment does not comprise a second side plate. In this way, the overall shape formed by the third embodiment is a T shape instead of an H shape. This reduces the number of inside corners, but also reduces the number of plates necessary.

**[0055]** In general, it can be said that the overall structure of figure 6 consists of two plates and two inside corners.

**[0056]** It is to be noted that the figures and the above description have shown the example embodiments in a simple and schematic manner. Many specific details have not been shown since the person skilled in the art should be familiar with these details and they would just unnecessarily complicate this description.

## Claims

1. A child play structure (1) comprising a main plate structure (2,3,4), the main plate structure of the child play structure consisting of a main plate (2), a first side plate (3) and a second side plate (4),
  - the main plate (2) having a max length (L1) greater than 58 cm and a max height (H1) greater than 58 cm and being arranged at an angle of less than 20 degrees to the vertical,
  - the first side plate (3) having a max length (L2) greater than 50 cm and a max height (H2) greater than 40 cm and being arranged at an angle of less than 20 degrees to the vertical, and
  - the second side plate (4) having a max length greater than 40cm and/or a max height greater

than 40 cm and being arranged at an angle of less than 20 degrees to the vertical,  
 • wherein said first side plate (3) is fastened to the main plate (2) in such a way that:

- i. the first side plate (3) forms a fixed angle to the main plate (2) of between 60 and 90 degrees,
- ii. at least 30% of the max length (L2) of the first side plate (3) extends past each side of the main plate (2), and
- iii. the shortest normal distance from the first side plate (3) to a side edge of the main plate (2) is less than 20% of the max length (L1) of the main plate (2)

• wherein said second side plate (4) is fastened to the main plate (2) in such a way that:

- i. the second side plate (4) forms a fixed angle to the main plate (2) of between 60 and 90 degrees, and
- ii. the shortest normal distance from the second side plate (4) to a side edge of the main plate (2) opposite to the side edge of the main plate which is closest to the first side plate (3) is less than 20% of the max length (L1) of the main plate (2),

• wherein the maximum length of the main plate is less than 1196mm and the maximum height of the main plate is less than 1196mm, and  
 • wherein the maximum length of the first and second side plate is less than 1196mm and the maximum height of the first and second side plate is less than 586mm and  
 • wherein the maximum length x maximum height of the main plate represents a plate area of A1 and the maximum length x maximum height of the first side plate represents a plate area of A2, and wherein A1 is greater than 80% of twice A2 and less than 120% of twice A2.

2. A child play structure (1) according to claim 1, **characterized in that** at least 20% of the max length of the second side plate (4) extends past each side of the main plate (2).
3. A child play structure (1) according to any one of claims 1 to 2, **characterized in that** the first side plate (3) is attached to a first side edge of the main plate (2) and/or **in that** the second side plate (4) is attached to a second side edge of the main plate (2).
4. A child play structure (1) according to any one of claims 1 to 3 and any one of claims 3 to 6, **characterized in that** the max length x max height of the

main plate (2) represents a plate area of A1 and the max length x max height of the second side plate (4) represents a plate area of A3 and **in that** A1 is greater than 80% of four times A3 and less than 120% of four times A3.

5. A child play structure (1) according to any one of claims 1 to 4, **characterized in that** the plates of the main plate structure (2,3,4) of the play structure are arranged such that the structure does not comprise any enclosed space large enough for a child to get inside.
6. A child play structure according to any one of claims 1-5 **characterized in that** said structure further comprises a corner strengthening element (30) arranged at a corner between the main plate (32) and the first side plate (31).
7. A child play structure according to claim 6, **characterized in that** said corner strengthening element is arranged as a shelf (30).
8. A kit comprising a main plate (2), a first side plate (3) and a second side plate (4), said kit being arranged to be assembled into a child play structure (1) according to any one of claims 1-7.
9. A method of manufacturing a child play structure (1) according to any one of claims 1-7, said method comprising the steps of:
  - providing a first plate having an area A,
  - cutting a first main plate (2) out of the area A,
  - providing a second plate having an area A,
  - cutting a second main plate (2) out of the area A,
  - providing a third plate having an area A,
  - cutting two first side plates (3) out of the area A,
  - packaging the first main plate (2) and one first side plate (3) together and
  - packaging the second main plate (2) and the other first side plate (3) together.
10. A method according to claim 9, **characterized in that** said method further comprises the steps of
  - providing a fourth plate having an area A,
  - cutting two second side plates (4) out of the area A,
  - packaging one second side plate (4) together with the first main plate (2) and one first side plate (3), and
  - packaging the other second side plate (4) together with the second main plate (2) and the other first side plate (3).
11. A method according to claim 9, **characterized in**



that said method further comprises the steps of: providing a third plate having an area A and cutting four second side plates (4) out of the area A and then packaging one of the four second side plates (4) with the first main plate (2) and then packaging another one of the four second side plates (4) with the second main plate (2).

## Patentansprüche

1. Kinderspielstruktur (1), die eine Hauptplattenstruktur (2, 3, 4) umfasst, wobei die Hauptplattenstruktur der Kinderspielstruktur aus einer Hauptplatte (2), einer ersten Seitenplatte (3) und einer zweiten Seitenplatte (4) besteht,

- wobei die Hauptplatte (2) eine maximale Länge (L1) größer als 58 cm und eine maximale Höhe (H1) größer als 58 cm aufweist und an einem Winkel von weniger als 20 Grad zu der Senkrechten eingerichtet ist,

- wobei die erste Seitenplatte (3) eine maximale Länge (L2) größer als 50 cm und eine maximale Höhe (H2) größer als 40 cm aufweist und an einem Winkel von weniger als 20 Grad zu der Senkrechten eingerichtet ist, und

- wobei die zweite Seitenplatte (4) eine maximale Länge größer als 40 cm und/oder eine maximale Höhe größer als 40 cm aufweist und an einem Winkel von weniger als 20 Grad zu der Senkrechten eingerichtet ist,

- wobei die erste Seitenplatte (3) an der Hauptplatte (2) derart befestigt ist, dass:

i. die erste Seitenplatte (3) einen fixen Winkel zu der Hauptplatte (2) von zwischen 60 und 90 Grad bildet,

ii. sich mindestens 30 % der maximalen Länge (L2) der ersten Seitenplatte (3) über jede Seite der Hauptplatte (2) hinaus erstrecken, und

iii. die kürzeste vertikale Entfernung von der ersten Seitenplatte (3) zu einer Seitenkante der Hauptplatte (2) weniger als 20 % der maximalen Länge (L1) der Hauptplatte (2) beträgt,

- wobei die zweite Seitenplatte (4) an der Hauptplatte (2) derart befestigt ist, dass:

i. die zweite Seitenplatte (4) einen fixen Winkel zu der Hauptplatte (2) von zwischen 60 und 90 Grad bildet, und

ii. die kürzeste vertikale Entfernung von der zweiten Seitenplatte (4) zu einer Seitenkante der Hauptplatte (2) gegenüber der Seitenkante der Hauptplatte, die der ersten

Seitenplatte (3) am nächsten ist, weniger als 20 % der maximalen Länge (L1) der Hauptplatte (2) beträgt,

- wobei die maximale Länge der Hauptplatte kleiner ist als 1196 mm und die maximale Höhe der Hauptplatte kleiner ist als 1196 mm, und

- wobei die maximale Länge der ersten und zweiten Seitenplatte kleiner ist als 1196 mm und die maximale Höhe der ersten und zweiten Seitenplatte kleiner ist als 586 mm, und

- wobei die maximale Länge x die maximale Höhe der Hauptplatte eine Plattenfläche A1 darstellt, und die maximale Länge x die maximale Höhe der ersten Seitenplatte eine Plattenfläche A2 darstellt, und wobei A1 größer ist als 80 % von zweimal A2 und kleiner als 120% von zweimal A2.

2. Kinderspielstruktur (1) nach Anspruch 1, **dadurch gekennzeichnet, dass** sich mindestens 20% der maximalen Länge der zweiten Seitenplatte (4) über jede Seite der Hauptplatte (2) hinaus erstrecken.

3. Kinderspielstruktur (1) nach einem der Ansprüche 1 bis 2, **dadurch gekennzeichnet, dass** die erste Seitenplatte (3) an einer ersten Seitenkante der Hauptplatte (2) angebracht ist, und/oder dass eine/die zweite Seitenplatte (4) an einer zweiten Seitenkante der Hauptplatte (2) angebracht ist.

4. Kinderspielstruktur (1) nach einem der Ansprüche 1 bis 3 und einem der Ansprüche 3 bis 6, **dadurch gekennzeichnet, dass** die maximale Länge x die maximale Höhe der Hauptplatte (2) eine Plattenfläche A1 darstellt, und die maximale Länge x die maximale Höhe der zweiten Seitenplatte (4) eine Plattenfläche A3 darstellt, und dass A1 größer ist als 80% von viermal A3 und kleiner als 120% von viermal A3.

5. Kinderspielstruktur (1) nach einem der Ansprüche 1 bis 4, **dadurch gekennzeichnet, dass** die Platten der Hauptplattenstruktur (2, 3, 4) der Spielstruktur derart eingerichtet sind, dass die Struktur keinen geschlossenen Raum umfasst, der groß genug ist, damit ein Kind hinein gelangen kann.

6. Kinderspielstruktur nach einem der Ansprüche 1-5, **dadurch gekennzeichnet, dass** die Struktur weiter ein Eckenverstärkungselement (30) umfasst, das an einer Ecke zwischen der Hauptplatte (32) und der ersten Seitenplatte (31) eingerichtet ist.

7. Kinderspielstruktur nach Anspruch 6, **dadurch gekennzeichnet, dass** das Eckenverstärkungselement als ein Regal (30) eingerichtet ist.

8. Bausatz, der eine Hauptplatte (2), eine erste Seitenplatte (3) und eine zweite Seitenplatte (4) umfasst, wobei der Bausatz eingerichtet ist, um in eine Kinderspielstruktur (1) nach einem der Ansprüche 1-7 zusammengebaut zu werden. 5
9. Verfahren zum Herstellen einer Kinderspielstruktur (1) nach einem der Ansprüche 1-7, wobei das Verfahren die folgenden Schritte umfasst: 10
- Bereitstellen einer ersten Platte, die eine Fläche A aufweist,
  - Ausschneiden einer ersten Hauptplatte (2) aus der Fläche A,
  - Bereitstellen einer zweiten Platte, die eine Fläche A aufweist, 15
  - Ausschneiden einer zweiten Hauptplatte (2) aus der Fläche A,
  - Bereitstellen einer dritten Platte, die eine Fläche A aufweist, 20
  - Ausschneiden von zwei ersten Seitenplatten (3) aus der Fläche A,
  - Verpacken der ersten Hauptplatte (2) und der ersten Seitenplatte (3) gemeinsam und
  - Verpacken der zweiten Hauptplatte (2) und der anderen ersten Seitenplatte (3) gemeinsam. 25
10. Verfahren nach Anspruch 9, **dadurch gekennzeichnet, dass** das Verfahren weiter folgende Schritte umfasst: 30
- Bereitstellen einer vierten Platte, die eine Fläche A aufweist,
  - Ausschneiden von zwei zweiten Seitenplatten (4) aus der Fläche A, 35
  - Verpacken einer zweiten Seitenplatte (4) gemeinsam mit der ersten Hauptplatte (2) und einer ersten Seitenplatte (3), und
  - Verpacken der anderen zweiten Seitenplatte (4) gemeinsam mit der zweiten Hauptplatte (2) und der anderen ersten Seitenplatte (3). 40
11. Verfahren nach Anspruch 9, **dadurch gekennzeichnet, dass** das Verfahren weiter folgende Schritte umfasst: Bereitstellen einer dritten Platte, die eine Fläche A aufweist, und Ausschneiden von vier zweiten Seitenplatten (4) aus der Fläche A und dann Verpacken einer der vier zweiten Seitenplatten (4) mit der ersten Hauptplatte (2), und dann Verpacken einer anderen der vier zweiten Seitenplatten (4) mit der zweiten Hauptplatte (2). 45 50

## Revendications

1. Structure de jeu pour enfant (1) comprenant une structure principale à plaques (2, 3, 4), la structure principale à plaques de la structure de jeu pour en-

fant étant constituée d'une plaque principale (2), d'une première plaque latérale (3) et d'une seconde plaque latérale (4),

- la plaque principale (2) présentant une longueur maximale (L1) supérieure à 58 cm et une hauteur maximale (H1) supérieure à 58 cm et étant agencée selon un angle inférieur à 20 degrés par rapport à la verticale,
- la première plaque latérale (3) présentant une longueur maximale (L2) supérieure à 50 cm et une hauteur maximale (H2) supérieure à 40 cm et étant agencée selon un angle inférieur à 20 degrés par rapport à la verticale, et
- la seconde plaque latérale (4) présentant une longueur maximale supérieure à 40 cm et/ou une hauteur maximale supérieure à 40 cm et étant agencée selon un angle inférieur à 20 degrés par rapport à la verticale
- dans laquelle ladite première plaque latérale (3) est fixée à la plaque principale (2) d'une manière telle que :

- i. la première plaque latérale (3) forme un angle fixe par rapport à la plaque principale (2) compris entre 60 et 90 degrés,
- ii. au moins 30% de la longueur maximale (L2) de la première plaque latérale (3) s'étend au-delà de chaque côté de la plaque principale (2), et
- iii. la distance normale la plus courte de la première plaque latérale (3) à un bord latéral de la plaque principale (2) est inférieure à 20 % de la longueur maximale (L1) de la plaque principale (2)

- dans laquelle ladite seconde plaque latérale (4) est fixée à la plaque principale (2) d'une manière telle que :

- i. la seconde plaque latérale (4) forme un angle fixe par rapport à la plaque principale (2) compris entre 60 et 90 degrés, et
- ii. la distance normale la plus courte de la seconde plaque latérale (4) à un bord latéral de la plaque principale (2) opposé au bord latéral de la plaque principale (2) qui est le plus proche de la première plaque latérale (3) est inférieure à 20 % de la longueur maximale (L1) de la plaque principale (2),

- dans laquelle la longueur maximale de la plaque principale est inférieure à 1196 mm et la hauteur maximale de la plaque principale est inférieure à 1196 mm, et
- dans laquelle la longueur maximale de la première et de la seconde plaque latérale est inférieure à 1196 mm et la hauteur maximale de la

- première et de la seconde plaque latérale est inférieure à 586 mm et
- dans laquelle la longueur maximale x la hauteur maximale de la plaque principale représente une surface de plaque A1 et la longueur maximale x la hauteur maximale de la première plaque latérale représente une surface de plaque A2, et dans laquelle A1 est supérieure à 80% de deux fois A2 et inférieure à 120% de deux fois A2.
2. Structure de jeu pour enfant (1) selon la revendication 1, **caractérisée en ce qu'**au moins 20 % de la longueur maximale de la seconde plaque latérale (4) s'étend au-delà de chaque côté de la plaque principale (2).
3. Structure de jeu pour enfant (1) selon l'une quelconque des revendications 1 et 2, **caractérisée en ce que** la première plaque latérale (3) est attachée à un premier bord latéral de la plaque principale (2) et/ou **en ce que** la seconde plaque latérale (4) est attachée à un second bord latéral de la plaque principale (2).
4. Structure de jeu pour enfant (1) selon l'une quelconque des revendications 1 à 3 et l'une quelconque des revendications 3 à 6, **caractérisée en ce que** la longueur maximale x la hauteur maximale de la plaque principale (2) représente une surface de plaque A1 et la longueur maximale x la hauteur maximale de la seconde plaque latérale (4) représente une surface de plaque A3 et **en ce que** A1 est supérieure à 80% de quatre fois A3 et inférieure à 120% de quatre fois A3.
5. Structure de jeu pour enfant (1) selon l'une quelconque des revendications 1 à 4, **caractérisée en ce que** les plaques de la structure principale à plaques (2, 3, 4) de la structure de jeu sont agencées de sorte que la structure ne comprenne aucun espace fermé suffisamment grand pour qu'un enfant y pénètre.
6. Structure de jeu pour enfant selon l'une quelconque des revendications 1-5 **caractérisée en ce que** la dite structure comprend en outre un élément de renforcement de coin (30) agencé au niveau d'un coin entre la plaque principale (32) et la première plaque latérale (31).
7. Structure de jeu pour enfant selon la revendication 6, **caractérisée en ce que** ledit élément de renforcement de coin est agencé comme une étagère (30).
8. Kit comprenant une plaque principale (2), une première plaque latérale (3) et une seconde plaque latérale (4), ledit kit étant agencé de manière à être assemblé en une structure de jeu pour enfant (1)

selon l'une quelconque des revendications 1-7.

9. Procédé de fabrication d'une structure de jeu pour enfant (1) selon l'une quelconque des revendications 1-7, ledit procédé comprenant les étapes de :
- fourniture d'une première plaque présentant une surface A,
  - découpe d'une première plaque principale (2) dans la surface A,
  - fourniture d'une deuxième plaque présentant une surface A,
  - découpe d'une seconde plaque principale (2) dans la surface A,
  - fourniture d'une troisième plaque présentant une surface A,
  - découpe de deux premières plaques latérales (3) dans la surface A,
  - emballage de la première plaque principale (2) et d'une première plaque latérale (3) ensemble et
  - emballage de la seconde plaque principale (2) et de l'autre première plaque latérale (3) ensemble.
10. Procédé selon la revendication 9, **caractérisé en ce que** ledit procédé comprend en outre les étapes de
- fourniture d'une quatrième plaque présentant une surface A,
  - découpe de deux secondes plaques latérales (4) dans la surface A,
  - emballage d'une seconde plaque latérale (4) conjointement avec la première plaque principale (2) et une première plaque latérale (3), et
  - emballage de l'autre seconde plaque latérale (4) conjointement avec la seconde plaque principale (2) et l'autre première plaque latérale (3).
11. Procédé selon la revendication 9, **caractérisé en ce que** ledit procédé comprend en outre les étapes de : fourniture d'une troisième plaque présentant une surface A et découpe de quatre secondes plaques latérales (4) dans la surface A puis emballage d'une des quatre secondes plaques latérales (4) avec la première plaque principale (2) puis emballage d'une autre des quatre secondes plaques latérales (4) avec la seconde plaque principale (2).

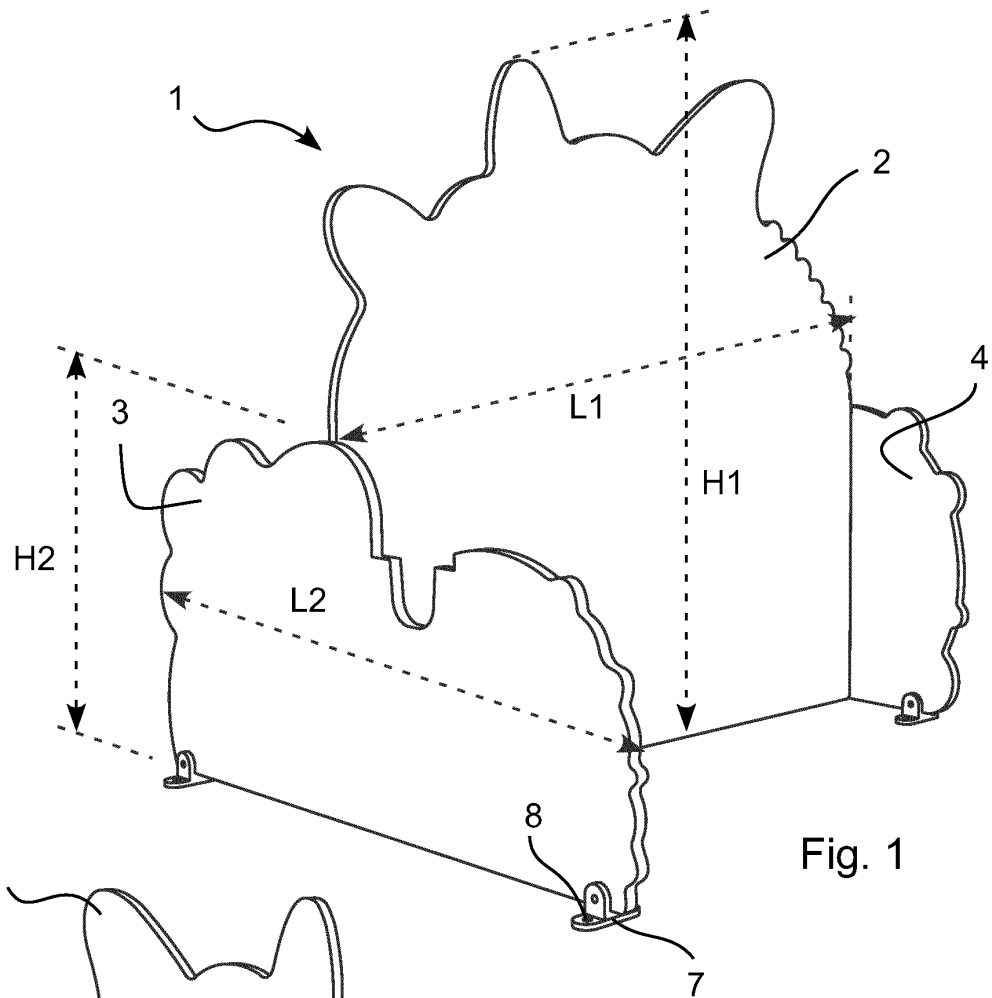


Fig. 1

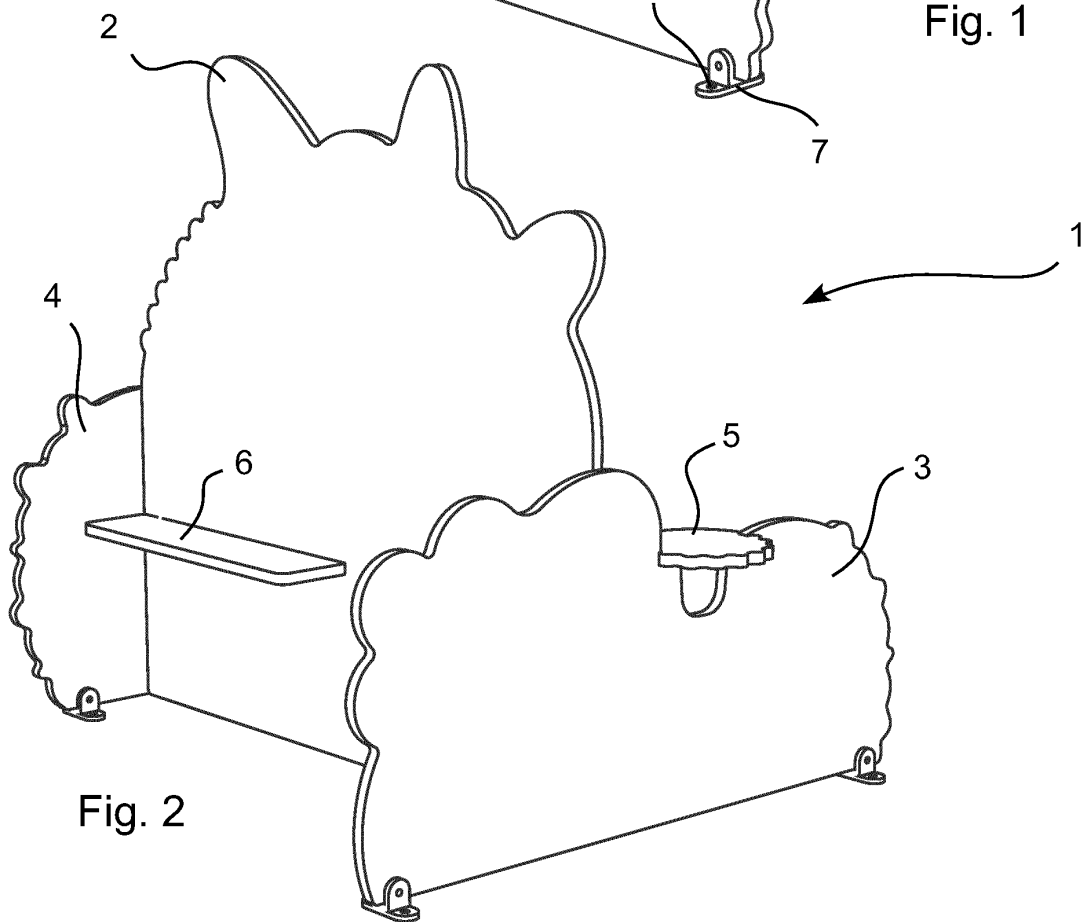
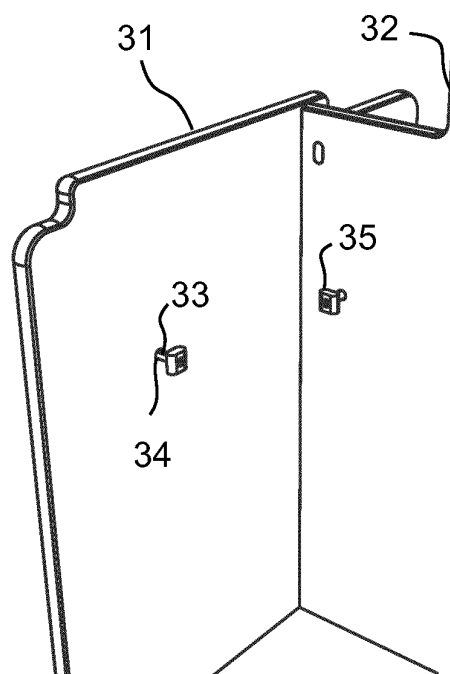
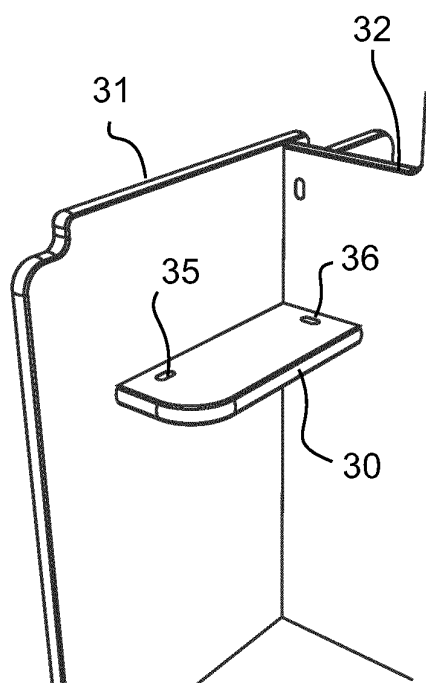
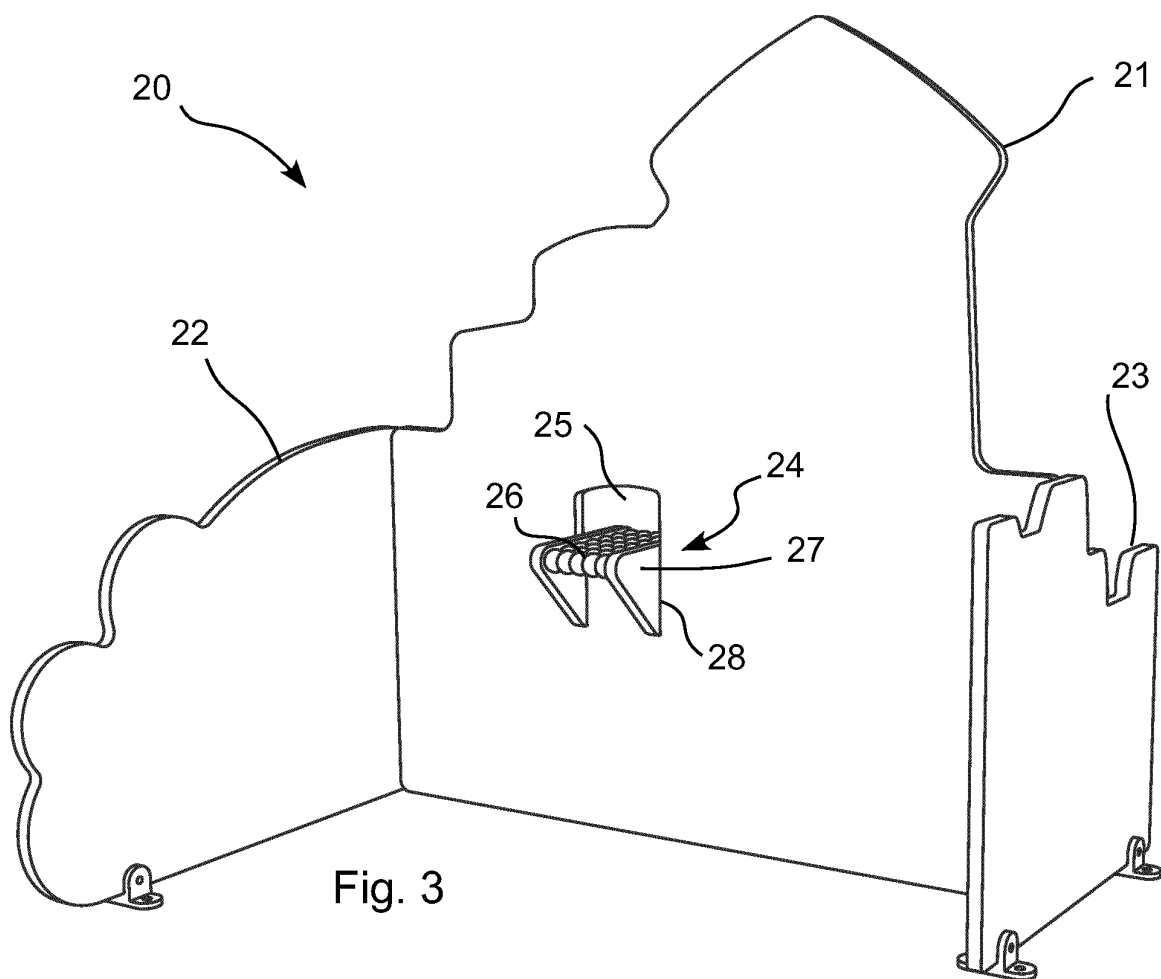
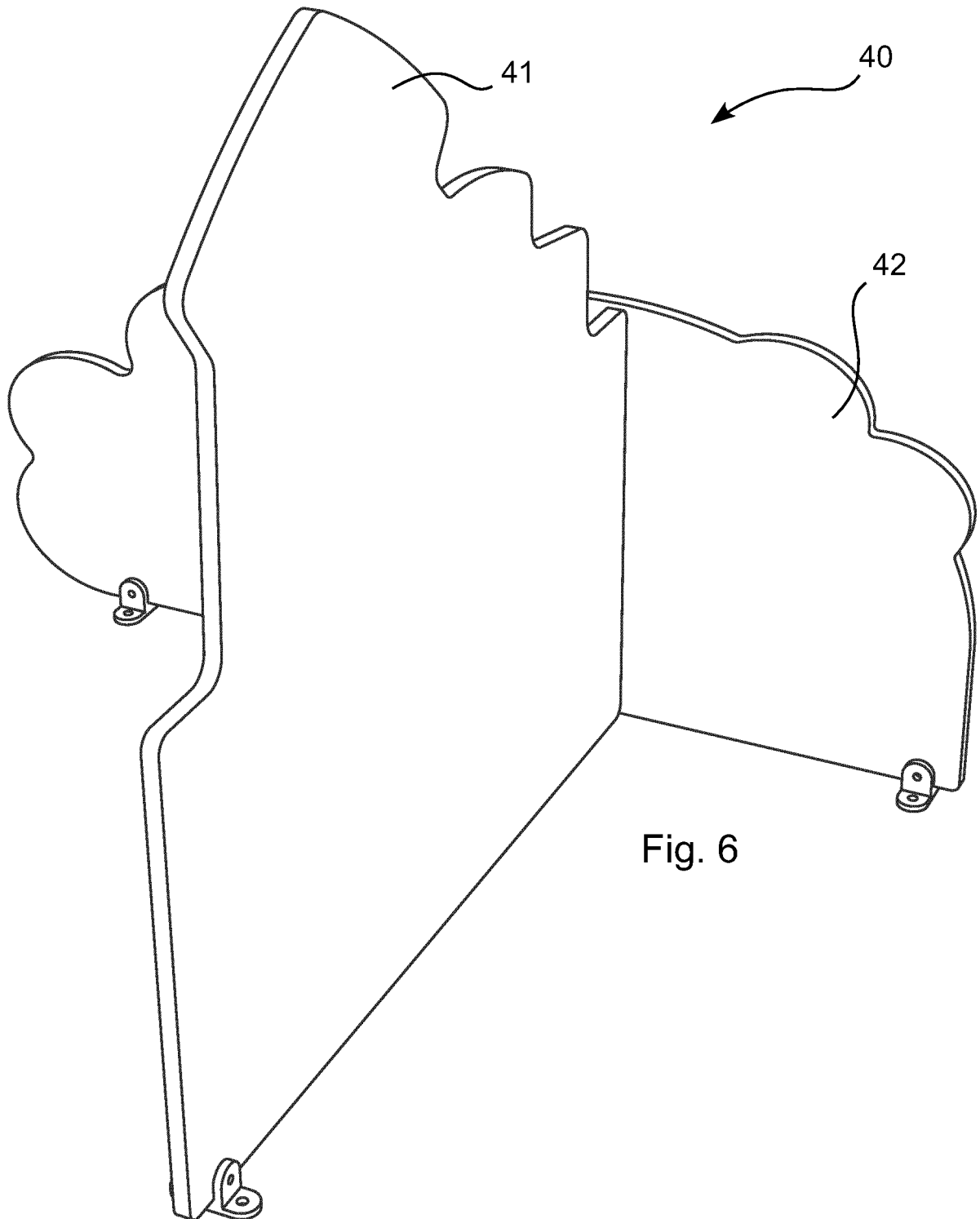


Fig. 2





**REFERENCES CITED IN THE DESCRIPTION**

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