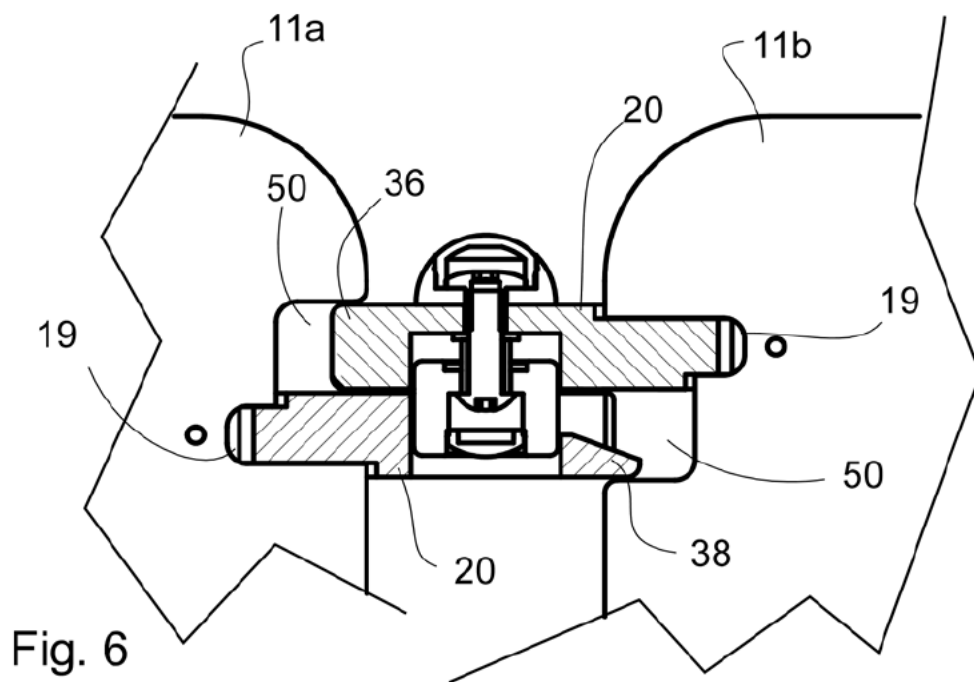




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Partition wall assembly comprising a plurality of vertically arranged panels, each panel comprising an upper and a lower left side panel connector and an upper and a lower right side panel connector, said upper and lower left side panel connectors being arranged vertically offset respectively at least one of said right side panel connectors comprising a recess formed in said first surface, at least one of said left side panel connectors respectively comprising a protrusion which extends from the first surface and extends into the recess, said protrusion being formed complementary to said recess. Where the protrusion is displaceably arranged such that the protrusion is displaceable along an axis which is perpendicular to the first surface of the left side panel connector and in that said protrusion is restricted to travel between two outer positions, an extended position where the protrusion is engaged with the recess and a retracted position where the protrusion is not engaged with the recess, and in that the protrusion remains connected to the left side panel connector in both outer positions.



PARTITION WALL ASSEMBLY

The current invention relates to a partition wall assembly comprising a plurality of vertically arranged panels, each panel having a left side edge and a right side edge, each panel comprising an upper and a lower left side panel connector fastened to said left side edge and extending outwardly away from the left side edge and an upper and a lower right side panel connector fastened to said right side edge and extending outwardly away from the right side edge, said upper and lower left side panel connectors being arranged vertically offset respectively from said upper and lower right side panel connectors such that the upper and lower left side panel connectors of a first panel overlap respectively the upper and lower right side panel connectors of an adjacent panel and where the upper and lower left side panel connectors of the first panel each comprise a first surface which respectively faces the upper and lower right side panel connectors of the adjacent panel and where the upper and lower right side panel connectors of the adjacent panel each comprise a first surface which respectively faces the upper and lower left side panel connectors of the first panel, at least one of said right side panel connectors comprising a recess formed in said first surface, at least one of said left side panel connectors respectively comprising a protrusion which extends from the first surface and extends into the recess, said protrusion being formed complementary to said recess.

According to the current specification, the term "panel connector" should be understood as an element which is fastened to one panel and which is used to connect two panels together. In the specification both left side panel connectors and right side panel connectors are mentioned. According to the current specification, the left side panel connectors are connectors which are mounted on the left side of the panel and right side panel connectors are connectors which are mounted on the right side edge of the panel. During assembly the left side panel connectors of one panel are connected to right

side panel connectors of an adjacent panel. Corresponding left and right side panel connectors can be referred to as a panel connector pair.

5 In the specification, it is described that there is an upper and a lower left side panel connector and an upper and lower right side panel connector. During assembly, the upper left side panel connector of a first panel engages with an upper right side panel connector of an adjacent panel and the lower left side panel connector engages with the lower right side panel connectors. In certain embodiments, the upper and lower panel connectors on one side are
10 the same, whereas in other embodiments they can be different.

For example, in the claim it is mentioned that "at least one of the right side panel connectors comprises a recess." In the most common embodiment and in the embodiment shown in the figures, both the upper and the lower right
15 side panel connectors comprise a recess and both the upper and the lower left side panel connectors comprise a protrusion. However, in one possible embodiment, the upper right connector could have a recess while the lower right connector could have a protrusion, while the upper left connector has a protrusion and the lower left connector has a recess, or vice versa. Different
20 solutions are possible.

In the claims it is specified that the left and right connectors are vertically offset from each other. In one possible definition, this can be interpreted in that the distance from the floor on which the panels are supported to the
25 bottom side of the left connector is greater than or equal to the distance from the floor to the top side of the right connector, or in that the distance from the floor on which the panels are supported to the top side of the left connector is less than the distance from the floor to the bottom side of the right connector.

30 According to the current specifications, the term panel should be understood as an element typically having a mostly rectangular shape having a length,

height and a thickness. In general, the height and length are much greater than the thickness. In certain cases, the panel can have a non rectangular shape and/or non uniform thickness. In this case, the length of the panel should be understood as the horizontal distance between the left most point and the right most point on the panel and the height of the panel should be understood as the vertical distance between the uppermost point on the panel and the lowermost point on the panel.

In addition to providing a partition wall assembly, the current specification also provides for a partition wall panel element which is suitable for use with the partition wall assembly. Likewise, the current specification also provides a novel panel connector suitable for mounting on panels to allow connecting panels together to form a partition wall assembly. The current specification also provides for a partition wall system comprising panels comprising panel connectors.

Description of related art

Partition wall assemblies as mentioned above are well known in the prior art and are used in many different applications. One example application is to divide spaces in office environments, for example to divide a larger room into individual office cubicles. Another example application is to create logical spaces which are divided from each other in a room, for example to separate different exhibitors at a trade show. Still another example application is to define separate play areas in a preschool, kindergarten or school. Many other applications exist.

Many of these partition wall assemblies comprise panels and panel connector elements where the panels are typically arranged perpendicularly to the floor and adjacent panels are connected to each other via panel connectors which are fastened to the individual panels. In this way, it is

possible to assemble larger dividing wall structures comprising multiple panels. In certain systems the angle between adjacent panels is fixed, for example at 90 degrees or at 180 degrees. In other systems, the panel connectors are formed to allow the angle between adjacent panels to be
5 adjusted freely. In this case, it can be said that the panel connector element has a hinge function in addition to a connection function. In certain applications, the hinge could be locked at different angles, whereas in other applications, the hinge could be free to pivot.

10 Examples of relevant partition wall systems are disclosed in the prior art. One system which is in some ways similar to the current invention is disclosed in EP1541775 B1. In this system, panel connectors are provided which are arranged as vertically offset, but co-axial cylinders connected to adjacent panels. Connectors on adjacent panels are connected together with a pin
15 which extends through aligned openings in the connectors. The connectors are connected to holes in the panels via clips, hooks, snaps or spring action. By providing multiple connectors on multiple panels at multiple vertical locations, multiple panels can be connected together along a common edge. For example, two, three or four panels can be connected such that edges of
20 all the panels are connected together at a common location. The system is however difficult to assemble for a single person and the system has a number of components which need to be fastened to the panels prior to joining two or more adjacent panels together. In general, many systems are provided in the prior art which comprise pin elements which are inserted into
25 holes in adjacent panels.

The main application area of the current invention is to provide flexible play areas for early childhood educational facilities like daycares, kindergartens, schools, etc. Some examples of prior art structures from similar applications
30 are disclosed in WO11132102 A2 and GB2448391. However, both these two systems are rather complex and can be difficult to manage for the

caretakers/teachers. This is especially true if the panels are heavy. Heavy panels are however often desired as they increase the stability of the system as well as providing a feel of quality.

- 5 Other prior art systems showing partition wall systems are disclosed in DE 2020 13003416 U1, US4250676, EP1297866 and GB2267722. However, the known systems can be difficult to assemble and not as stable as desired.

Summary of the invention

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A first aspect of the current invention is to provide a system as mentioned in the introductory paragraph which is easier to assemble than the prior art systems.

- 15 A second aspect of the current invention is to provide a system as mentioned in the introductory paragraph which does not require significant lifting of the panels during assembly.

- 20 A third aspect of the current invention is to provide a system as mentioned in the introductory paragraph which is secure and which prevents users from accidentally releasing two connected panels from each other.

- 25 These aspects are provided at least in part by providing a partition wall assembly as mentioned in the introductory paragraph where the protrusion is displaceably arranged such that the protrusion is displaceable along an axis which is perpendicular to the first surface of the left side panel connector and in that said protrusion is restricted to travel between two outer positions, an extended position where the protrusion is engaged with the recess and a retracted position where the protrusion is not engaged with the recess and in
- 30 that the protrusion remains connected to the left side panel connector in both outer positions and in that the right side panel connector further comprises a

track which guides the protrusion into engagement with the recess. In this way, a simple, robust and secure assembly is provided which is easy to assemble without having to lift the panels.

- 5 According to the current specification, the phrase "the protrusion is restricted to travel between two outer positions" should be understood in that during normal use, the panel connector and the protrusion are arranged such that the protrusion is limited from going past the two specified positions and only positions between the two specified positions are allowed.

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In one possible interpretation, the phrase "the protrusion remains connected to the left side panel connector in both outer positions" could be understood in that that the protrusion moves back and forth between the two positions while remaining mechanically connected to the panel connector. In this
15 interpretation, the protrusion cannot be removed from the panel connector during normal use. In another possible interpretation, the protrusion could be interpreted as being an attached component of the left side panel connector and not as a separate element which can be removed from the left side panel connector during normal use. In one embodiment, the protrusion could be
20 arranged to remain aligned with an axis which is perpendicular to the first surface in both the first and second positions of the protrusion.

In one embodiment, the protrusion could be biased towards its extended position. In this way, the protrusion will be pushed into the extended position
25 whenever possible. This will ensure good locking behaviour when connecting two panel connectors. In one embodiment, the biasing could occur via a spring element, for example a helical spring. In another embodiment, the biasing could occur via gravity in that the protrusion has a certain weight and in that the extended position of the protrusion is below the retracted position.

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In one embodiment, the right side panel connector could further comprise an access opening which is an extension of the recess. In this case, a user can manually displace the protrusion from its extended position to its retracted position via the opening. For example, the user could insert a finger into the opening and manually push the protrusion from its extended position to its retracted position. However, the protrusion could be moved from its extended position to its retracted position in many other different ways. In one example, the recess could be closed at one side and the protrusion could be accessible from the left panel connector. For example a handle connected to the protrusion could be pulled to displace the protrusion from its extended position to its retracted position. Different forms of mechanisms arranged to displace the protrusion could also be imagined.

In the example embodiments shown in the figures, the protrusion can be displaced from its extended position to its retracted position by manually pushing on the bottom of the protrusion. To increase the safety of the assembly, the panel connectors could be provided with additional safety mechanisms which lock the protrusion in its extended position. In one example, the user must first disable a locking mechanism prior to being able to displace the protrusion. In one embodiment, the locking mechanism could be attached to the right side panel connector and in another embodiment the locking mechanism could be attached to the left side panel connector. In one embodiment, the locking mechanism has two positions, a first locked position and a second unlocked position. The locking mechanism could furthermore be provided with a biasing mechanism which biases the locking mechanism into its locked position.

In one embodiment, and as shown in the embodiments in the figures, the right side panel connector of an overlapping left and right side panel connector pair could be arranged below the left side panel connector of said overlapping left and right panel connector pair and the protrusion of said left

panel connector pair could extend downwardly away from the left side panel connector in the extended position of the protrusion. In one embodiment, both the upper and lower panel connector pairs could be arranged in this manner.

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In one embodiment the right side panel connector could further comprise a ramp at one end of the track which can displace the protrusion from its extended position to its retracted position when connecting two adjacent panels. In this way, during the assembly of two panels, no manual actions
10 need to be taken with respect to the protrusion, as it will lift itself and fall into place without any complicated manual interactions.

In one embodiment, the recess and/or the protrusion could have a circular shape. A preferred embodiment is where both the recess and the protrusion
15 have a circular shape, but an embodiment where the protrusion is circular and the recess is non circular or where the recess is circular and the protrusion is not circular will also work. In all three situations, the circular form will allow the panel connectors of the panel connector pair to pivot with respect to each other.

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In order to secure the panels better together, in one embodiment the panels could further comprise a first vertical securing element which is engageable with a corresponding vertical securing element of an adjacent panel to prevent vertical displacement of the panels with respect to each other. In one
25 embodiment, the first vertical securing element is connected to a first panel and the corresponding vertical securing element is connected to the adjacent panel. In another embodiment, the vertical securing elements are connected to the respective panel connectors. In another embodiment, one vertical securing element is connected to the panel and the corresponding vertical
30 securing element is connected to the panel connector, or vice versa.

Many different embodiments of vertical securing elements are possible. In one embodiment, and as shown in the figures, the first vertical securing element on a first panel could be formed as a cut-out in the left or right side edge of the panel and the corresponding vertical securing element of an adjacent panel being the forward most or outward most portion of a right or left side panel connector respectively which is inserted into the cut-out.

In one other embodiment, the first vertical securing element could be arranged as a horizontally arranged pin on one side panel connector which engages with a horizontal hole or recess in the opposite connector. In another embodiment, the first vertical securing element could be a flange on a first connector which engages with an upper or lower surface of the opposite connector.

In one embodiment, the first vertical securing element could be an element which is attached to the right side edge of a first panel between the upper and the lower panel connectors and which engages with a corresponding vertical securing element attached to the left side edge of an adjacent panel.

In one embodiment, the portion of the right and/or left panel connectors which extends away from the right and/or left side edges respectively of the panel has a circular outer periphery in a horizontal plane. In this way, for certain embodiments, when the panel connector is pivoted with respect to the other panel connector of the connector pair, the vertical securing elements can remain engaged with each other.

The main invention as described above relates to a partition wall assembly comprising panels connected together via panel connectors. The invention according to the current specification however also relates to a novel panel element comprising upper and lower left side panel connectors fastened on the left side edge and upper and lower right side panel connectors fastened

on the right side edge such that the panel element is suitable for use in one or more of the different embodiments of a partition wall assembly as defined in the current specification.

- 5 Another invention relates to a panel connector pair comprising a left side panel connector and a right side panel connector where the panel connector pair is suitable for use in one or more of the different embodiments of the partition wall assembly as defined in the current specification.
- 10 The invention as claimed in the current claims is directed to a partition wall assembly as mentioned in the introductory paragraph which uses a displaceable protrusion as defined in the characterizing portion of current claim 1. However, the specification also discloses a second invention which could form the basis of a divisional application. The second invention relates
- 15 to a partition wall assembly as mentioned in the introductory portion, where the first panel further comprises a first vertical securing element which is engageable with a corresponding vertical securing element of an adjacent panel to prevent vertical displacement of the first and adjacent panels with respect to each other. It should be clear to the person skilled in the art, that
- 20 the features of this second invention could be combined with different features as described above with respect to the first invention. In this way, it should be clear to the person skilled in the art that portions of this paragraph could be used to form a new independent claim and the features of the different embodiments described in this specification and in the claims could
- 25 be combined as desired to form additional dependent claims.

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

30 or addition of one or more other features, integers, steps, components or groups thereof. For example, in the claims it is claimed that the panel

comprises an upper and a lower panel connector. However within the scope of the current specification, more panel connectors could also be provided. For example, three or more connectors could be provided on each side edge within the scope of protection.

5 Brief description of the drawings

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 perspective view of a first embodiment of a partition wall assembly according to the current invention.

15 Figure 2 shows a perspective view of two connected panels of a second embodiment of a partition wall assembly according to the current invention.

Figure 3 shows a partial exploded perspective view of the partition wall assembly of figure 2.

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Figure 4 shows a perspective view of a left and right side panel connector of the partition wall assembly of figure 2.

Figure 5 shows a top view of the left and right side panel connector of figure 4.

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Figure 6 shows a partial cross section view through the left and right side panel connectors and panels of figure 2.

30 Figure 7 shows a cross section view through the left and right side panel connectors of figure 4 in a disconnected configuration.

Figure 8 shows a cross section view through the left and right side panel connectors of figure 7, but where the left and right panel connectors are in the process of being connected together.

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Figure 9 shows a cross section view through the left and right side panel connectors of figure 7, but where the connectors are connected.

Figure 10 shows a top detail view of the two connected panels of figure 2.

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Figure 11 shows a side detail view of the two connected panels of figure 2.

Figure 12 shows a perspective view showing two panels connected at an angle of 135 degrees.

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Figure 13 shows a top detail view of the two connected and angled panels of figure 12.

Figure 14 shows a side detail view of the two connected and angled panels of figure 12.

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Figure 15 shows a perspective view of a third embodiment of a partition wall comprising one panel and two wall anchor brackets.

Figure 16 shows a detail cross section view of a fourth embodiment of a partition wall assembly according to the current invention.

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Detailed description of the embodiments

Figure 1 shows a first embodiment 1 of a partition wall assembly according to the current invention. The example partition wall comprises a number of

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panels 2 connected together by panel connectors 3. Further details of the panels and the panel connectors will be provided below. A first wall mounting bracket 4 is attached at a left side of the partition wall and another wall mounting bracket 5 is attached at a right side of the partition wall. The two wall mounting brackets 4, 5 are fastened to walls (not shown) and hold the remaining panels in a vertically arranged manner.

For the sake of example, the example shown in figure 1 comprises a number of panel elements each having a different shape. Each panel in the example is different and each panel comprises some form of functional element. These functional elements in the current example are play related functional elements and provide extra play value to the partition wall for children. For example, one of the panels has an openable gate, another panel has a rattle element, a third panel has a turnable wheel, etc...

Besides panel elements 2, the partition wall of the example of figure 1, also comprises an adapter panel 6 for joining a desk 7 or other play element to the partition wall system.

Figures 2 to 14 show different views of the same basic embodiment 10. In the figures, for the sake of simplicity, simple rectangular panels 11 are used. The panels could however be formed with many different shapes and sizes and could have many different functional elements, as shown in for example figure 1.

The panels comprise a top edge 12, a bottom edge 13, a left side edge 14 and a right side edge 15. Furthermore the panels comprise a first major surface 16 and a second major surface 17. The panels are arranged vertically.

On the left side edge of the panels, two left side panel connectors 20 are arranged. The left side panel connectors 20 are fastened to the panel at the left side edge of the panel and extend outwardly past the left side edge of the panel. On the right side edge of the panels, two right side panel connectors 22 are arranged. The right side panel connectors 22 are connected to the panel at the right side edge of the panel and extend outwardly past the right side edge of the panel.

As can be seen from figure 2, the left side panel connectors 20 are arranged slightly higher than the right side panel connectors 22, when measured with respect to the lower edge of the panels or the ground (not shown) on which the panels are standing. In this way, when two adjacent panels are to be connected together, the left side panel connectors 20 of a first panel 11b slide over the right side panel connectors 22 of an adjacent panel 11a such that the left side panel connectors 20 overlap the right side panel connectors 22.

It should be noted that in the current embodiment, the left side panel connectors are higher than the right side panel connectors. However, it should be clear that depending on how the panels are arranged the left and right side edges of the panels will be switched. Hence left and right have been used in this specification as shown in the figures in order to make the description and claims easier to follow. However, the person skilled in the art should understand that left and right should not be considered limiting to the scope of protection and are just used to differentiate between the two side edges of the panel for the sake of clarity.

Furthermore, in the current embodiment, both left side panel connectors are arranged higher than both right side panel connectors. However, in another embodiment, the upper left side panel connector could be arranged higher than the upper right side panel connector and the lower left side panel

connector could be arranged lower than the lower right side panel connector, or vice versa.

Figure 3 shows a partial exploded view of two adjacent side edges of two adjacent panels 11a, 11b showing respective left and right panel connectors 20,22. As can be seen from the figure, cut-outs 19 are formed in the side edges of the panels 11 and the panel connectors are arranged in the cut-outs. The cut-outs provide for a strong connection between the panel connectors and the panel. However, in other embodiments, for example the embodiment of figure 16 which will be discussed later on, no cut-out needs to be provided in the side edges of the panels.

When assembling the wall partition, two panels 11a,11b each comprising pre-mounted left and right side panel connectors 20,22 are pushed together to engage the panel connectors. This will be discussed in more detail later on, especially with respect to figures 7-9.

Figures 4 and 5 show detail views of the left and right panel connectors 20, 22 respectively. Each panel connectors is formed from a plate like element having a first surface 24, 26 and a second surface 28, 30. When the panel connectors are connected, the first surface 24 of the left panel connector 20 and the first surface 26 of the right panel connector face each other. In the current embodiment the first surfaces abut and are in contact. However in other embodiments there will be a space between the first surfaces. In the current embodiment, the thickness of the plate element of the left and right panel connectors is less than the width and length of the plate element of the left and right panel connectors.

A rightmost portion 32 of the left side panel connector is formed as a clamp and is engaged with the left side edge of the panel to hold the panel connector in place on the panel. The panel connector is arranged such that

the plane of the plate element of the panel connector is arranged perpendicular to the plane of the panel element. In this way, the first and second surfaces of the left side panel connector face down and up respectively. However, as should be clear to the person skilled in the art, depending on the height placement of the panel connectors with respect to the other panel connectors, the first and second surfaces could face up and down respectively. Likewise a leftmost portion 34 of the right side panel connector 22 is also configured as a clamp to engage the right side edge of the panel.

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A left most portion 36 of the left side panel connector 20 is formed as a semi-circle. Likewise, a right most portion 38 of the right side panel connector 22 is also formed as a similar semi-circle. The rightmost and leftmost portions of the panel connectors are connected via a portion which is tangent to the semi-circular portion. The width of the semi-circular portion 36,38 is, in the current embodiment, greater than the width of the clamp portion 32,34. As will be discussed later on, the use of the semi-circular shape allows the two panels to pivot with regards to each other while maintaining a secure engagement between the two panels and the two panel connectors.

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A slot 40 passing through the clamp portion 32,34 of the left and right side panel connectors allows the panel connectors to be clamped to the side edges of the panel and to adapt to any tolerances in the thickness of the panel elements.

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The left side panel connector further comprises a displaceable protrusion 42. The displaceable protrusion 42 is arranged to be able to move up and down along a direction which is perpendicular to the first surface 24 of the left side panel connector 20. The displacement mechanism is discussed in more detail later on. The protrusion is, in this embodiment, formed as a circular cylinder.

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A recess 44 is formed in the right side panel connector 22. The recess and the protrusion are complementary and are arranged to engage each other in a form fitting relationship to prevent displacement of the left and right side panel connectors with respect to each other in the horizontal plane. As such in the current embodiment, the recess is also formed as a circular recess. Once the protrusion 42 has been engaged with the recess 44, the two panel connectors are fixed together but can still pivot with respect to each other. The protrusion extends from the first surface of the left side panel connector and the recess is arranged in the first surface of the right side panel connector.

A ramp 46 is provided at the right most side of the right side panel connector and a track 48 is provided in the right side panel connector which links the ramp and the recess. The protrusion of the left side panel connector can then engage with the ramp of the right side panel connector and be pushed up as the two panel connectors are pushed together. The protrusion then slides along the track and extends again when it reaches the recess. The two connectors are then firmly joined together. In order to release the two panel connectors, the user can push the protrusion upwards via the bottom opening of the recess. In the current embodiment, the recess is arranged as a through going hole having a uniform diameter, however, in another embodiment, the recess could be arranged as a recess having a depth which was less than the thickness of the panel connector. A through going hole could then be provided in the bottom of the recess to allow the user to engage the protrusion to disengage it from the recess. In another embodiment (not shown), the recess could have a closed bottom, and the protrusion could be provided with a handle which could be accessed from the top side of the left side panel connector to lift the protrusion up manually.

Figure 6 illustrates an additional feature which provides extra security to the partition wall assembly. As can be seen from figure 6, the cut-out 19 provided in the side edge of the panels into which the panel connectors are mounted, is also provided with an extra cut-out portion 50 into which the outer portion 36,38 of the panel connectors is engaged when connecting two adjacent panels. In this way, the left side panel connector 20 is slightly inserted into the recess in the right side edge of the left panel 11a and the right side panel connector 22 is slightly inserted into the recess in the left side edge of the right panel 11b. In this way, it is not possible to lift the panels out of engagement with each other. It could be imagined that if the two extra cut-outs 50 were not present and the panel connectors were a little bit shorter, then the right panel could be lifted up and the two panels would then disengage from each other. In contrast, in the embodiment shown in figure 6, the only way to disengage the panels from each other is to reach underneath the right panel connector and push the protrusion upwardly to disengage it from the recess. This allows the right panel to be slid to the right thereby disengaging it from the left panel.

It should be noted that in order to separate two panels, it is necessary to retract the protrusions of both the upper and lower panel connector pairs simultaneously. This is relatively easy for a grownup to do, but is difficult for a child to do. This increases the safety of the partition system.

Figures 7-9 illustrate via cross sectional views how the panel connectors get engaged with each other. In figure 7, the two panel connectors are not connected and are arranged at a distance to each other. The protrusion 42 is in its extended position. In figure 8, the two panel connectors have been pushed towards each other. As the protrusion 42 meets the ramp 46, the protrusion is pushed upwards into its retracted position. Figure 8 shows the protrusion pushed halfway up. In figure 9, the two connectors are connected in that the protrusion has been pushed to the left enough so that the

protrusion lines up with the recess and via gravity falls into the recess. The two panel connectors are now locked together and can no longer displace with respect to each other in a horizontal plane. It is still possible to disconnect the panel connectors of figure 9 by vertically lifting the left side panel connector upwardly with respect to the right side panel connector. However, when the panel connectors also interact with the cut-outs 50 in the side edges of the panels, it is no longer possible to lift the connectors away from each other and only pivotal motion is allowed.

- 10 The vertical locking of the two panel connectors is illustrated in more detail in figures 10 and 11 which show how the cut-outs 50 help prevent the panels from lifting away from each other.

15 Figures 12-14 show what happens when the panels 11a,11b are pivoted with respect to each other. As can be seen, due to the circular portion 36,38 of the panel connectors 20,22, the panel connectors stay in contact with the cut-out 50 in the side edges of the panels and therefore, even during pivoting, the panel connectors stay engaged with the cut-out.

- 20 Figure 15 shows an example of two wall brackets 52, 54 and a panel element 11 similar to the panel elements shown in figures 2-14. In real life, this example would most likely not ever be used, and is only shown to illustrate the function of the wall brackets. As can be seen from the figures, the left most wall bracket 52 is similar to the right side edge of a normal panel and the right most wall bracket 54 is similar to the left side edge of a normal panel. As such, the left most wall bracket 52 has two right side panel connectors 22 mounted on the bracket. These two right side panel connectors can be engaged with two left side panel connectors 20 of a normal panel. Likewise, the rightmost wall bracket 54 has two left side panel connectors 20 connected to the wall bracket. These two left side panel
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connectors 20 can be engaged with the right side panel connectors of a normal panel.

5 In this example, the panel could be pivoted slightly about a vertical axis with respect to the orientation shown in the figures and then the right side panel connectors 22 of the panel 11 could be slid into connection with the left side panel connectors 22 of the right most wall bracket 54. The protrusions of the left side panel connectors 20 of the panel could then be held up while the panel is pivoted into place. Once the protrusions are released and are
10 aligned with the recess in the right side panel connectors of the left most wall bracket 52, the panel is firmly held in place by the wall brackets.

It should be clear to the person skilled in the art that the materials of the different components of the partition wall assembly could be chosen from
15 many different materials. In one non limiting example, the panels are made of a plywood material and the plate portions of the panel connectors are also made of a plywood material. In this example, the recess, the track and the ramps can be machined into the wooden material of the plywood plate element. Likewise the cut-outs can also be machined into the wooden
20 material of the panel. In a more advanced version, the panels could have a plywood core and a plastic covering layer on the outer surfaces of the panel. Many other material options are however also possible.

It should also be clear to the person skilled in the art, that the size of the partition wall assembly can be adjusted and fit to different applications. For
25 example, for the example embodiment, where the assembly is used with small children, the panels can be approximately 60-80cm high. However, in other applications, for example in an office environment, the panels could be 180cm high. The panel connectors can also be scaled to fit different
30 applications and both smaller and larger panel connectors could be imagined.

Figure 16 shows a cross sectional view of an embodiment of a left side panel connector 60 and a right side panel connector 62. In this embodiment, there is no cut-out in the panel, but a flange 64 on the left side panel connector 60
5 holds the bottom surface 66 of the right side panel connector 62 in place. Likewise, a flange 68 on the right side panel connector 62 holds the upper surface 70 of the left side panel connector 60 in place. This again ensures that the two panels cannot be lifted away from each other. In this example, it is not necessary to provide a cut-out in the panel itself and therefore less
10 preparation is required. In another embodiment (not shown), it could be imagined that only one of the two flanges 64,68 was present.

It is to be noted that the figures and the above description have shown the example embodiments in a simple and schematic manner. Many more
15 specific mechanical 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.

SKILLEVÆGSSAMLING

PATENTKRAV

- 5 1. Skillevægssamling (10), der omfatter en flerhed af vertikalt anbragte paneler (11), hvor hvert panel har en venstre sidekant (14) og en højre sidekant (15), hvert panel omfatter et øvre og et nedre venstre sidepanelforbindelseselement (20), der er fastgjort til den venstre sidekant og strækker sig udadtil fra den venstre sidekant, og et øvre og et nedre højre sidepanelforbindelseselement (22), der er fastgjort til den
- 10 højre sidekant og strækker sig udadtil fra den højre sidekant, idet det øvre og det nedre venstre sidepanelforbindelseselement er anbragt vertikalt forskudt for henholdsvis det øvre og det nedre højre sidepanelforbindelseselement, således at det øvre og det nedre venstre sidepanelforbindelseselement på et første panel overlapper henholdsvis det øvre og det nedre højre sidepanelforbindelseselement på
- 15 et tilstødende panel, og hvor det øvre og det nedre venstre sidepanelforbindelseselement på det første panel hver især omfatter en første overflade (24), der vender mod henholdsvis det øvre og det nedre højre sidepanelforbindelseselement på det tilstødende panel, og hvor det øvre og det nedre højre sidepanelforbindelseselement på det tilstødende panel hver især omfatter en
- 20 første overflade (26), der vender mod henholdsvis det øvre og det nedre venstre sidepanelforbindelseselement på det første panel, hvor mindst ét af de højre sidepanelforbindelseselementer omfatter en fordybning (44), som er dannet i den første overflade, hvor mindst ét af de venstre respektive sidepanelforbindelseselementer omfatter et fremspring (42), der strækker sig fra den
- 25 første overflade og strækker sig ind i fordybningen, idet fremspringet er dannet komplementært til fordybningen, **kendetegnet ved, at** fremspringet (42) er anbragt forskydeligt, således at fremspringet er forskydeligt langs en akse, som er vinkelret på den første overflade (24) på det venstre sidepanelforbindelseselement, og **ved, at** fremspringet er begrænset til bevægelse mellem to yderpositioner, en udstrakt
- 30 position, hvor fremspringet er i indgreb med fordybningen, og en sammentrukket position, hvor fremspringet ikke er i indgreb med fordybningen, og **ved, at** fremspringet forbliver forbundet med det venstre sidepanelforbindelseselement i begge yderpositioner, og **ved, at** det højre sidepanelforbindelseselement endvidere omfatter et spor (48), som fører fremspringet ind i indgreb med fordybningen.

2. Skillevægssamling (10) ifølge krav 1, **kendetegnet ved, at** fremspringet (42) er forspændt mod den udstrakte position.
- 5 3. Skillevægssamling (10) ifølge krav 1 eller 2, **kendetegnet ved, at** det højre sidepanelforbindelseselement (22) endvidere omfatter en adgangsåbning (44), der er en forlængelse af fordybningen (44), hvorigennem det er muligt for en bruger manuelt at forskyde fremspringet fra den udstrakte position til den sammentrukne position.
- 10 4. Skillevægssamling (10) ifølge et hvilket som helst af kravene 1 til 3, **kendetegnet ved, at** det højre sidepanelforbindelseselement (22) i et par af et overlappende venstre og højre panelforbindelseselement er anbragt neden under det venstre sidepanelforbindelseselement (20) i parret af det overlappende venstre og højre panelforbindelseselement, og **ved, at** fremspringet (42) i parret af det
15 overlappende venstre og højre panelforbindelseselement strækker sig nedad væk fra det øverste panelforbindelseselement i fremspringets udstrakte position.
5. Skillevægssamling (10) ifølge et hvilket som helst af kravene 1 til 4, **kendetegnet ved, at** det højre sidepanelforbindelseselement (22) endvidere
20 omfatter en rampe (46) i den ene ende af sporet (48), som kan forskyde fremspringet (42) fra den udstrakte position til den sammentrukne position, når to tilstødende paneler (11) forbindes.
6. Skillevægssamling (10) ifølge et hvilket som helst af kravene 1 til 5,
25 **kendetegnet ved, at** fordybningen (44) og/eller fremspringet (42) har en cirkulær form.
7. Skillevægssamling (10) ifølge et hvilket som helst af kravene 1 til 6, **kendetegnet ved, at** panelerne (11) endvidere omfatter et første vertikalt
30 fastgørelseselement (50), der kan gå i indgreb med et tilsvarende vertikalt fastgørelseselement (36, 38) på et tilstødende panel med henblik på at forhindre vertikal forskydning af panelerne i forhold til hinanden.

8. Skillevægssamling ifølge krav 7, **kendetegnet ved, at** det første vertikale fastgørelseselement (50) på et første panel (11a) er dannet som en udskæring (19) i den venstre eller den højre sidekant af panelet, og hvor det tilsvarende vertikale fastgørelseselement (36, 38) på et tilstødende panel er den forreste del (36, 38) af et højre eller et venstre sidepanelforbindelseselement (20, 22), som
5 indsættes i udskæringen.

9. Skillevægssamling ifølge krav 7 eller 8, **kendetegnet ved, at** den del (36, 38) af det højre og/eller det venstre panelforbindelseselement (20, 22), der
10 strækker sig væk fra den højre og/eller den venstre sidekant (14, 15) på panelet (11), har en cirkulær ydre periferi i et horisontalt plan.

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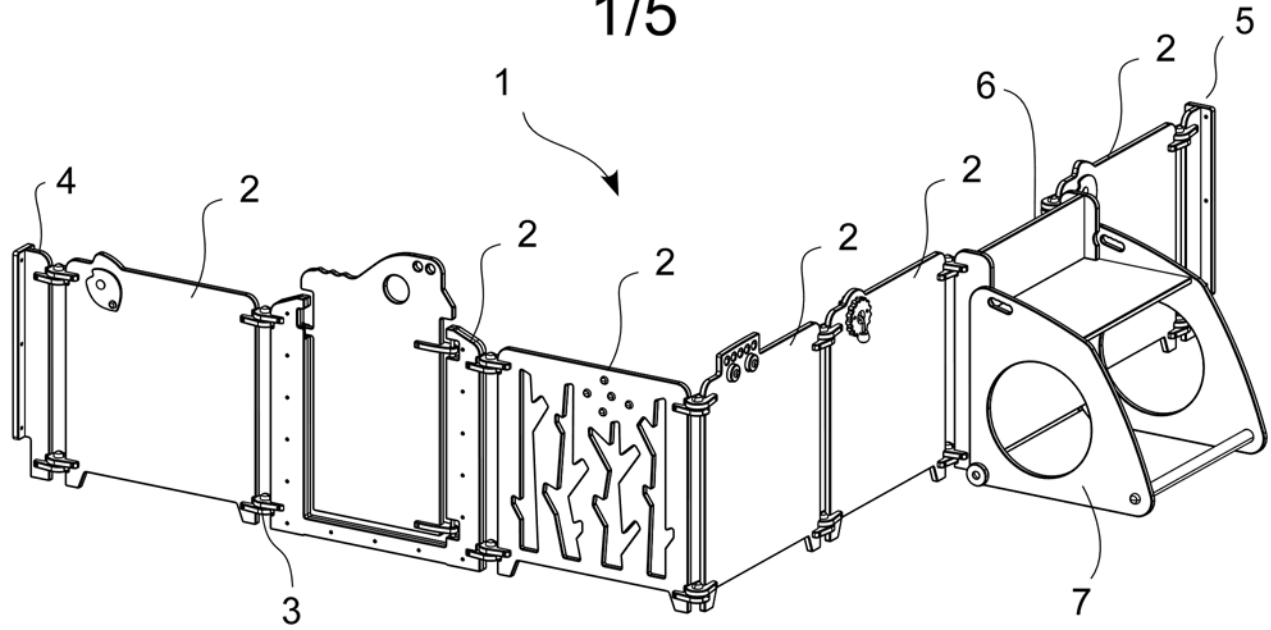


Fig. 1

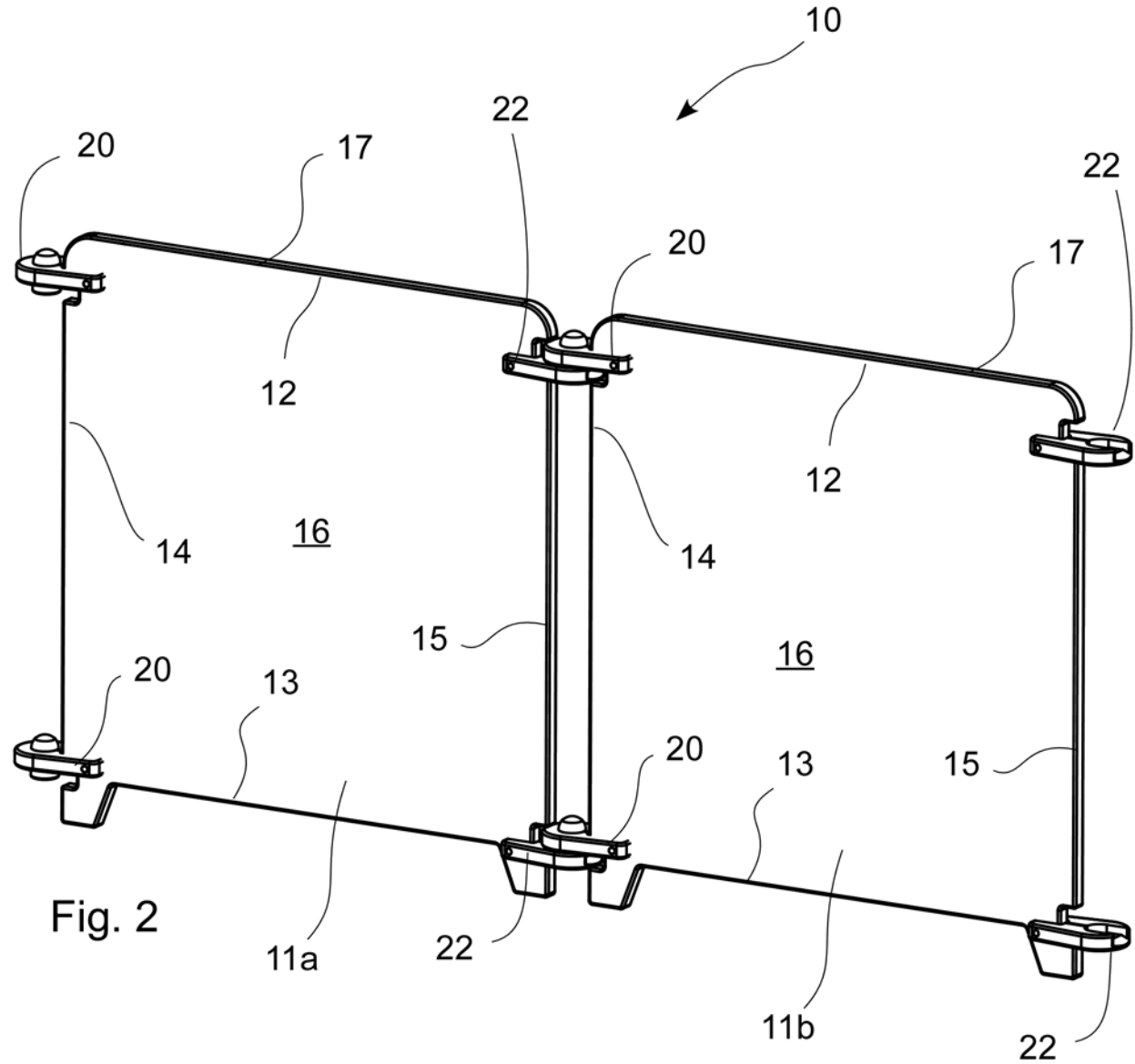


Fig. 2

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Fig. 3

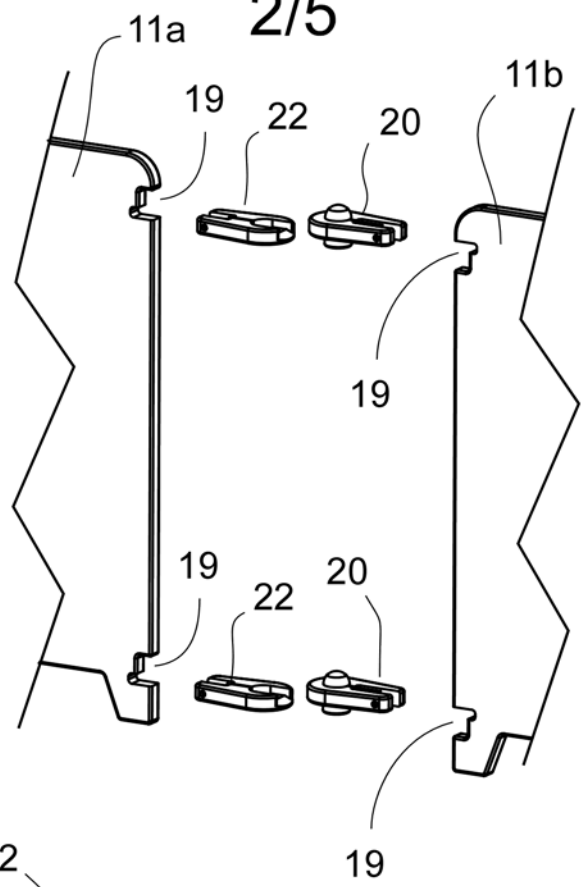


Fig. 4

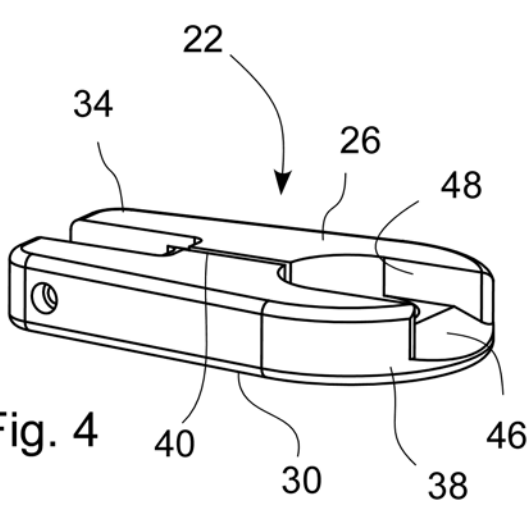
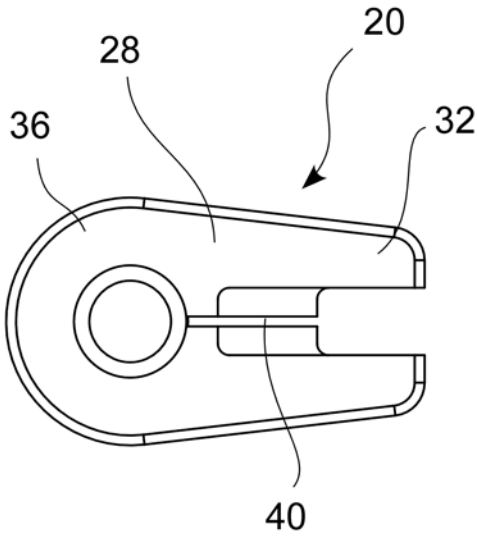
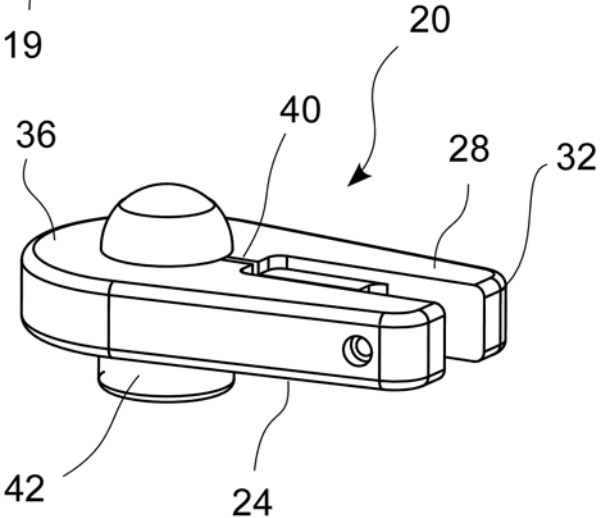
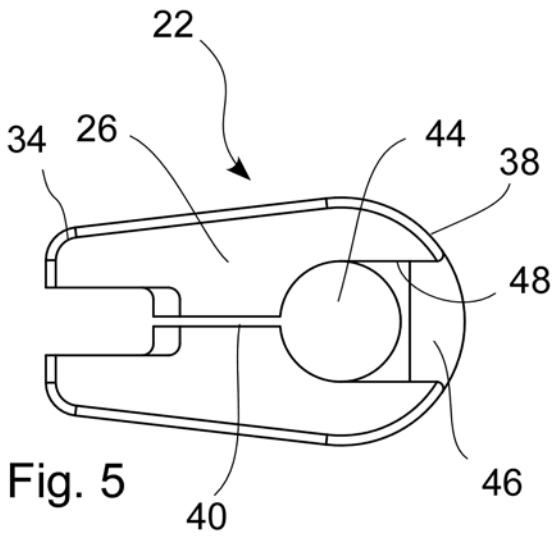
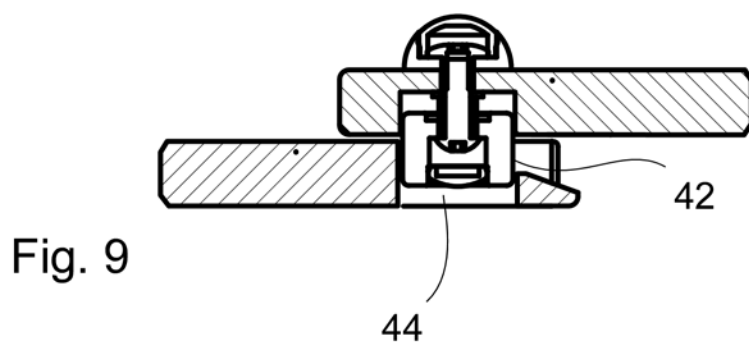
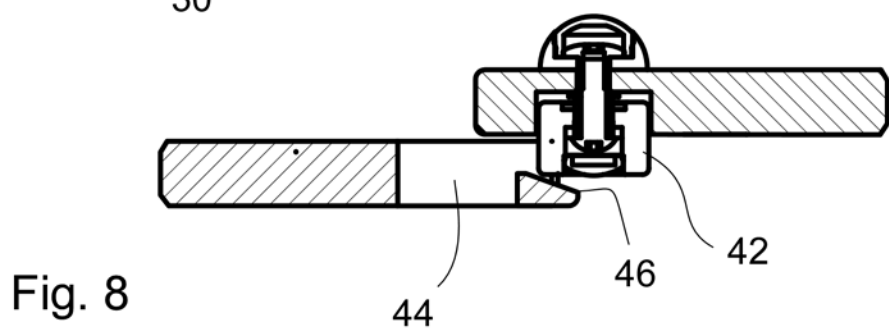
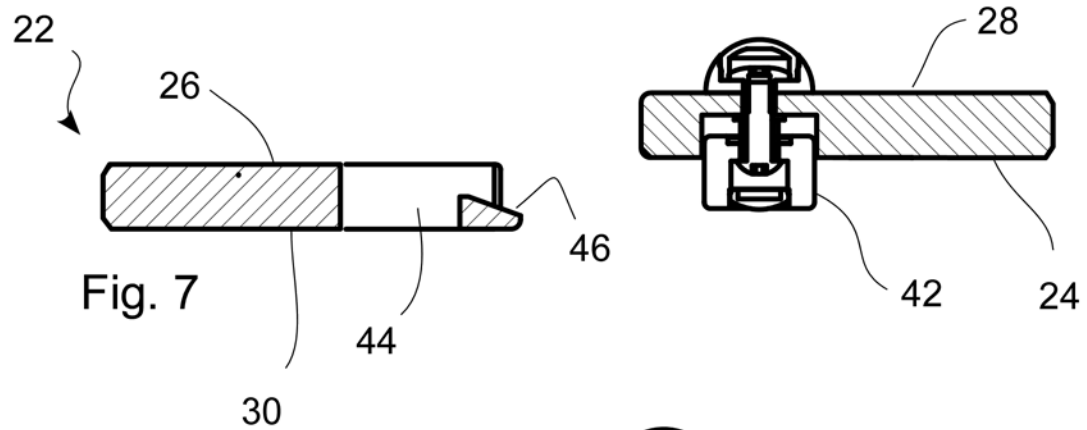
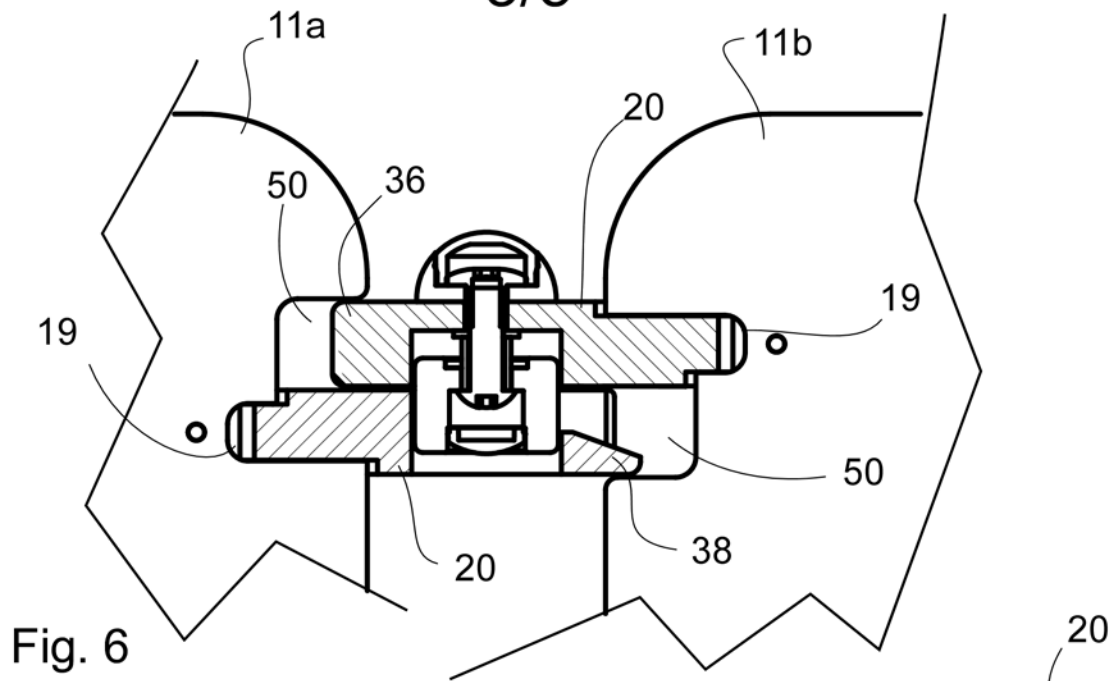


Fig. 5



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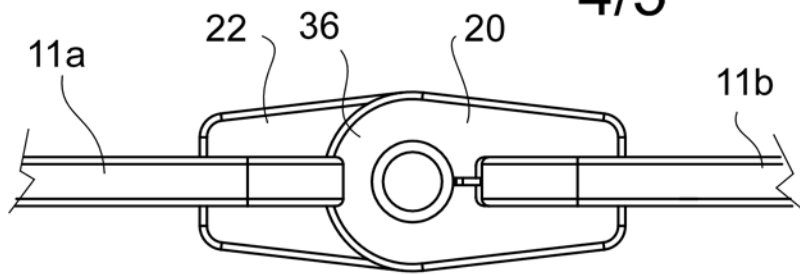


Fig. 10

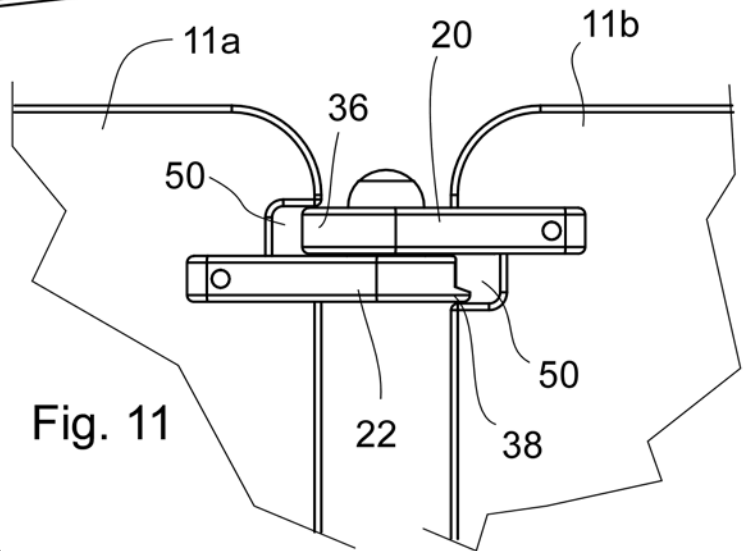


Fig. 11

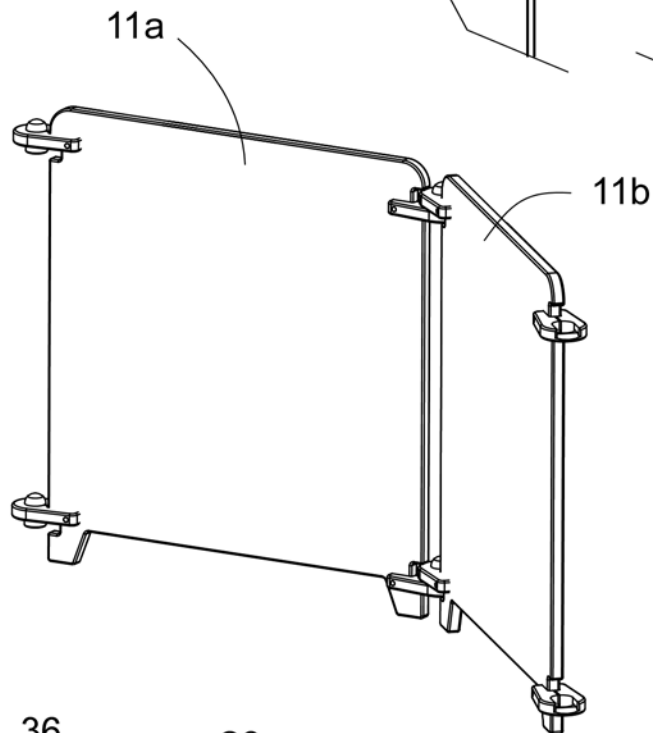


Fig. 12

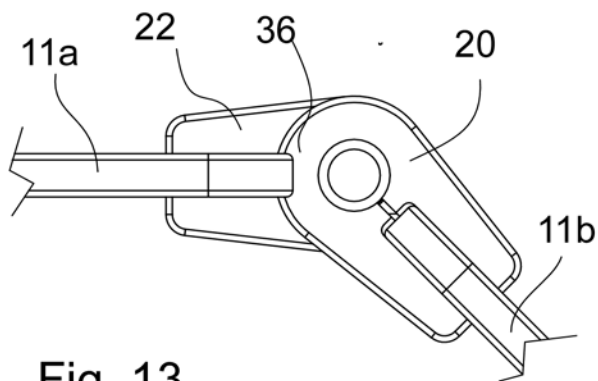


Fig. 13

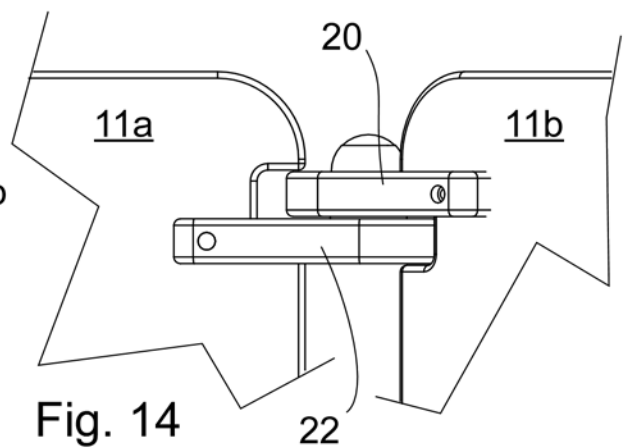


Fig. 14

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