

Description

The present invention relates to latching mechanisms, especially for children's playyards of the foldable type. The present application is divided out of EP-A-0295761 which is concerned with the playyard per se. Foldable playyards having upstanding corner legs are generally known. A foldable playyard, when erected, should be stable; it should provide maximum support so as to keep the corner legs upstanding. For maximum convenience, a foldable playyard should be readily collapsible to a storage position without disassembly of any parts. In the storage position, the playyard should be easily transportable from one location to another.

The playyard of EP-A-295761 comprises:

a unitary central hub member;

a lower frame assembly comprising corner leg-connecting members and hub legs each pivotably coupled at one end portion thereof to said hub member and pivotably coupled at an opposite end portion thereof to one of said corner leg-connecting members such that said hub legs are collapsible by pivoting said hub legs from a substantially coplanar spread configuration wherein said hub legs diverge radially outwardly from said hub member to a compact non-coplanar configuration wherein said hub legs are substantially parallel;

an upper frame assembly comprising corner rail connecting members and interconnecting side means;

and corner legs interconnecting said upper and lower frame assemblies, each corner leg being fixedly coupled at one end portion thereof to one of said corner leg-connecting members and fixedly coupled at an opposite end portion thereof to one of said corner members such that said corner legs are collapsible radially inwardly towards said hub member from a substantially parallel configuration in which said corner legs are spread apart by said hub legs and side means to a substantially parallel compact configuration wherein said corner legs are drawn together by said hub legs and side means;

characterised in that said side means comprises a pair of side rails and a medial rail-connecting member disposed therebetween, each of said side rails being pivotably coupled at one end portion thereof to one of said corner rail-connecting members and pivotably coupled at an opposite end portion thereof to said medial rail-connecting member such that each pair of side rails is collapsible by pivoting said side rails from a substantially in-line configuration to a generally V-shaped configuration.

US-A-4008499 describes a collapsible playpen where, at the base, a central support ring has four radially outwardly extending arms which are pivota-

ble relative to the central ring, so that opposed pairs of arms are in line. Each arm includes a connecting rod and a spring-assisted slider which moves in a track of the arm. The slider can be locked in place by operation of a locking cable.

US-A-4226549 describes an apparatus for latching a pair of hinge members being mounted on a bracket of U-cross-section. A reciprocable lock mounted on the bracket is slidable parallel to the swing axis to and from a position in which it locks the hinge members. The apparatus can be used in collapsible playpens.

It is an object of the present invention to provide a latching mechanism which is appropriate for latching a pair of rails in a substantially in-line configuration, especially but not exclusively for a foldable playyard.

According to one aspect of the invention there is provided apparatus for latching a pair of rails in substantially in-line configuration, comprising:

a medial rail-connecting member disposed between said rails, each rail being pivotably coupled at one end portion thereof to said medial rail-connecting member,

and a pair of spring-biased members associated one with each rail,

characterised in that:

said spring-biased members comprise a pair of oppositely sprung pin members, each pin member being at least partially telescoped within one of said rail end portions,

a holding member is coupled to said medial rail-connecting member between said sprung pin members,

and each sprung pin member is provided with a cam surface portion for cammingly contacting said holding member such that said pin member retracts against spring pressure and with a latch surface portion for engaging said holding member under spring pressure.

The apparatus preferably includes means for releasing said rails from said substantially in-line configuration comprising a latch release member slidably coupled to said holding member and having a cam surface portion for cammingly contacting said sprung pin members such that said pin members retract against spring pressure and disengage said holding member.

For the purpose of illustrating the invention, there is shown in the drawings an embodiment which is presently preferred. It should be understood however that this invention is not limited to the precise arrangements shown.

In the drawings:

Figure 1 is a perspective of the foldable playyard in a collapsed position, housed within a carrying case formed by a discrete foldable floor.

Figure 2 is a perspective of the collapsed playyard with the foldable floor unfolded.

Figure 3 is a perspective of the foldable playyard in the erected state wherein the playyard is ready for use.

Figure 4 is a section taken along 4-4 in Figure 3.

Figure 5 is a section taken along 5-5 in Figure 3.

Figure 6 is a section taken along 6-6 in Figure 5.

Figure 7 is an exploded perspective view of the latch mechanism.

Figure 8 is an exploded perspective of the support feet and corner rail connecting members.

Figure 9 is a section taken along 9-9 in Figure 2.

Detailed Description of Invention

Referring to the drawings, wherein like numerals indicate like elements, there is shown in Figure 1 a perspective of the foldable playyard 10 in its collapsed state and housed within a box-shaped carrying case 12 formed by a discrete foldable floor 14 having snap fasteners 16, 18, 20 and a carrying handle 22. The foldable floor 14 comprises a foam cushion 24 enclosed within layers 26, 28 of fabric material such as nylon. See Figure 9. Fabric layers 26, 28 are stitched together along their peripheries and to a fabric edging 30. The foldable floor 14 is partitioned into four sections, each containing one of four rigid panels 32, 34, 36, 38. Each panel may be made from a Masonite material. Each panel is disposed between fabric material 28 and a like layer of fabric material 40 which is stitched along its periphery to layers 26, 28 and runner 30. Fabric material 40 is also stitched to fabric material 28 along parallel seams 42, 44, 46. Seams 42, 44, 46 partition the floor 14 into the four sections, each section containing one of the panels 32, 34, 36, 38. The sections are foldable about seams 42, 44, 46 into the box-shaped configuration shown in Figure 1. Each of the snap fasteners 16, 18, 20 comprises a flexible strap 48 stitched to material 40 and provided with a snap fastener structure 50 as shown in Figure 12. Each snap fastener 16, 18, 20 releasably attaches to one of three mating snap fastener structures 52 on an opposite side of the floor 14. In use, the floor 14 is unfolded as shown in Figure 2 and inserted in the erected playyard as shown in Figure 3 with the material 26 forming a smooth play surface for the child. Thus, the child does not contact any seam or stitching on the floor.

The foldable playyard 10 includes a flexible enclosure 54 comprising side panel portions 56, 58, 60, 62 and a floor portion 64. These portions of the enclosure are stitched together to form a unitary flexible structure. If desired, side panel portions 58, 62 may be provided with netting as shown in Figure 3 so as to enhance ventilation and to

allow the child to see and be seen. Each of the side panel portions 56, 58, 60, 62 includes a laterally extending tubular sleeve 66, 68, 70 or 72. The side panel portions are joined together by vertically extending tubular sleeves 74, 76, 78, 80. The sleeves facilitate mounting of the enclosure on the Playyard frame as described hereafter.

The lower portion of the playyard frame includes rigid (identical) corner leg connecting members 84, 86, 88, 90 preferably in the form of support feet as shown in Figures 1-4. The upper portion of the frame includes rigid corner rail connecting members 92, 94, 96, 98. See Figures 3 and 4. The support feet and corner rail connecting members may be molded from a polymeric plastic material such as ABS. Each pair of adjacent corner rail connecting members supports a side rail means (shown but not numbered) at the upper portion of the playyard frame. Referring to Figure 5, each side rail means includes a pair of rigid, tubular metal rails 100, 102 which may be made from 22 gauge steel. End portion 104 of rail 100 is received within a corner rail connecting member (98) and is pivotably coupled to the corner rail connecting member by a rivet pin 106 extending through aligned openings in the corner rail connecting member and the rail end portion. The opposite end portion 108 of rail 100 extends within and is pivotably coupled to a medial rail connecting member 110 by a rivet 112 extending through aligned openings in the medial rail connecting member and the rail end portion. See Figures 5 and 7. Medial rail connecting member 110 is preferably made of a rigid metal material and is cut out at 116 and 116' to facilitate pivoting of rails 100, 102. Referring to Figure 5, end portion 114 of rail 102 extends within and is pivotably coupled to an associated corner rail connecting member (96) by a rivet pin 117 in the same manner as end portion 104 of rail 100 and its associated corner rail connecting member (98). The opposite end portion of rail 102 extends within and is pivotably coupled to medial rail connecting member 110 in the same manner as end portion 108 of rail 100.

The medial rail connecting member 110 houses a latch mechanism for automatically latching rails 100, 102 in a substantially in-line configuration when the playyard is erect as shown in Figure 5. The latch mechanism includes a pair of sprung pin members 122, 124. Each pin member is made of a rigid polymeric plastic material and includes a nose portion 126 and flexible legs 128, 130. Legs 128, 130 partially enclose a spring chamber (shown but not numbered), within which a compression spring 132 is housed, and have rib-type projections 134, 136 respectively. Each sprung pin member is assembled by inserting spring 132 in the spring chamber and then tele-

scoping the pin member into the rail end portion (108 or 118) as shown by broken lines in Figure 7. Before the pin member is telescoped within the rail end portion, the rail (100 or 102) is pivotably coupled to the medial rail connecting member 110 by the rivet pin (112 or 120). The pin member is then inserted in the rail end portion so that ribs 134, 136 contact the rivet pin (112 or 120) thereby spreading legs 128, 130 until the ribs clear the rivet pin. Legs 128, 130 then snap back in place so that the pin member is captured on the rivet pin. Spring 132 is then captured between the rivet pin and an end wall (shown in Figure 5 but not numbered) of the spring chamber.

Although one side rail means and latch mechanism have been described in connection with side rails 100, 102, medial connecting member 110, pin members 122, 124 and corner rail connecting members 96, 98, it should be understood that identical side rail means and latch mechanisms are provided between each adjacent pair of corner rail connecting members. The lengths of the rail pairs which are part of each side rail means is determined by the width of the side of the playyard on which the side rail means is located as can be appreciated from inspection of Figure 3.

Before rails 100, 102 are pivotably coupled to medial rail connecting member 110 and pin members 122, 124 are sprung in the rails, a portion of the latch mechanism comprising a holding member 138 (having interlocking halves 140, 142 as shown in Figure 7) is secured to the medial rail connecting member together with a latch release mechanism 144. Each holding member half is provided with a lug 146 and a notch 148. Each lug-notch configuration is a mirror image of the other so that the holding member halves can be matingly interlocked prior to insertion in the medial rail connecting member. Each lug-notch configuration is formed on a land 150 which acts as a guide for the latch release mechanism 144. The latch release mechanism 144 includes a hand manipulable portion 152 and a slotted key portion 154 having converging cam surfaces 156, 158. See Figure 7. In assembling the holding member and latch release mechanism, land 150 of one of the holding member halves (140, 142) is located inside the slotted portion of key 154. The two holding member halves are then matingly interlocked by the lug and notch pairs. The assembled holding member 138 and latch release mechanism 144 is then secured to medial rail connecting member 110 by a rivet pin 160 which extends through the slotted portion of key 154 and aligned openings in holding member halves 140, 142 and the medial rail connecting member. To assist in locating the assembled holding member and latch release mechanism within medial rail connecting member 110, each side of

the medial rail connecting member is provided with a notch 162 and the outer face of each holding member half 140, 142 is provided with a matching lug 164.

After the holding member 138 and latch release mechanism 144 are assembled and secured to the medial rail connecting member 110, the rails 100, 102 are pivotably coupled to the medial rail connecting member, and the pin members 122, 124 are sprung in the rails as previously explained. The entire assembly is then inserted in the laterally extending sleeve (70) of a side panel portion of the flexible enclosure. The outer end portions 104, 114 of the rails are then pivotably coupled to the associated corner rail connecting members (96, 98) as shown in Figure 5. The process is repeated to assemble each of the side rail means, for each side of the playyard.

The corner legs 272, 274, 276, 278 are spaced apart and upstanding in a substantially parallel configuration as shown in Figure 3 when the playyard is erected. The hub legs are oriented horizontally in a common plane and the side rails are oriented in-line so as to spread the corner legs in this configuration. The floor portion 64 of the flexible enclosure rests on the hub legs. The hub legs 206, 212 are not coupled to the support feet but are provided to further stabilize the playyard. Each of hub legs 206, 212 includes a generally straight section extending radially outwardly from the hub member 166 and a curved free end or foot portion 286. See Figure 4. Each hub leg 206, 212 is slidably coupled to the enclosure floor portion by a loop or strap 288 (Figure 4).

Initially, each pair of side rails 100, 102 is collapsed in a V-shaped configuration as shown in Figure 2 when the playyard is collapsed. Each medial rail connecting member 110 is grasped and pulled upwardly so as to swing rails 100, 102 into a substantially in-line configuration as shown in Figure 5. As rails 100, 102 swing upwardly, the nose portion 126 of each sprung pin member 122, 124 cammingly engages the sides of holding member 138, causing the pin members to retract against spring pressure until the nose portions clear the holding member. At that point, the pin members snap forwardly to engage the top edge portions of the holding member thereby latching the rails 100, 102 in the in-line configuration. The central hub member 166 is then pushed downwardly so as to move the hub legs to their horizontal positions with the corner legs upstanding. The erected playyard assumes the shape shown in Figure 3 with the corner legs spread apart by the hub legs and side rails.

To collapse the playyard, hub member 166 is first pushed upwardly (e.g., approximately 20 cm (8 inches)) so as to pivot the hub legs as shown in

phantom in Figure 4 thereby partially collapsing the lower frame from the horizontal co-planar spread configuration. With the hub legs partially collapsed, the rails 100, 102 of each side rail means can be released from the in-line configuration. Each medial rail connecting member 110 is grasped so as to squeeze the latch release mechanism 144 upwardly whereby the key cam surfaces 156, 158 (Figure 7) cammingly engage the nose portions of pin members 122, 124, at the lower edge of each nose portion, thereby causing the pin members to retract against spring pressure and clear the top of holding member 138. This releases the rails 100, 102 from the in-line configuration such that the medial rail connecting member 110 can be pushed downwardly so as to collapse the rails towards the V-shaped configuration. With the side rails collapsed, the hub member 166 is pulled upwardly so as to fully collapse the hub legs to the compact non-coplanar configuration wherein the hub legs are substantially parallel. The lower portions of the corner legs, at the support feet, are drawn inwardly towards each other. The upper ends of the corner legs are then gathered towards each other so as to fully collapse the rails in the V-shaped configuration. Thus, the corner legs move from the upstanding spread configuration shown in Figures 3 and 4 to the compact configuration shown in Figure 2. In both configurations of the corner legs, the corner legs are substantially parallel.

The foldable playyard is easily assembled, erected and collapsed. There is no need to disassemble any parts to collapse the playyard. In collapsing the playyard, the corner legs are drawn to a compact configuration by the hub legs (lower frame assembly) and side rails (upper frame assembly). There is no need to re-assemble any parts to erect the playyard. When erected, the playyard is maintained in a stable configuration with the corner legs upstanding. The corner legs are spread by the hub legs (lower frame assembly) and side rails (upper frame assembly). The playyard is foldable to a compact collapsed configuration wherein it is easily transportable from one location to another. The discrete foldable floor provides a smooth, sturdy cushioned playing surface for the child while being foldable to a box-shaped configuration for housing and transporting the collapsed playyard. If desired, fabric material fasteners, such as Velcro (Trademark) fasteners, can be used instead of snap fasteners 16, 18, 20 to secure the folded floor in the box-shaped configuration.

The support feet, corner rail connecting members, hub member, sprung collars and sprung pin members can be moulded from a rigid polymeric plastic material. The hub legs, corner legs and side rails can be made of a rigid, lightweight metal

material. The flexible fabric enclosure is easily mounted on the corner legs and side rails during assembly but is not removable thereafter. Preferably, the side rail enclosure sleeves 66, 68, 70, 72 are separated from the side rails by foam cushion sleeves 348 as shown in Figures 5 and 6.

In all embodiments of the invention, the side rails cannot be inadvertently collapsed by the child. In the embodiment shown, the side rails can be collapsed only if the hub member is first pulled upwardly so as to partially collapse the corner legs by drawing the lower portions of the corner legs radially inwardly towards the hub member, and then the latch release mechanism is operated. If the hub member is not pulled upwardly, the corner legs remain upstanding in the spread configuration and the latch release mechanism resists operation, not allowing the collapse of the side rails.

Claims

1. Apparatus for latching a pair of rails (100, 102) in substantially in-line configuration, comprising:

a medial rail-connecting member (110) disposed between said rails, each rail (100, 102) being pivotably coupled (112, 120) at one end portion (108, 118) thereof to said medial rail-connecting member (110),

and a pair of spring-biased members associated one with each rail, characterised in that:

said spring-biased members comprise a pair of oppositely sprung pin members (122, 124), each being at least partially telescoped within one of said rail end portions (108, 118),

a holding member (138) is coupled to said medial rail-connecting member (110) between said sprung pin members (122, 124),

and each sprung pin member (122, 124) is provided with a cam surface portion (126) for cammingly contacting said holding member (138) such that said pin member can be retracted against spring pressure and with a latch surface portion for engaging said holding member (138) under spring pressure.

2. Apparatus according to claim 1, characterised by means for releasing said rails (100, 102) from said substantially in-line configuration comprising a latch release member (144) slidably coupled to said holding member (138) and having a cam surface portion (156, 158) for cammingly contacting said sprung pin members (122, 124) such that said pin members retract against spring pressure and disengage said holding member.



phantom in Figure 4 thereby partially collapsing the lower frame from the horizontal co-planar spread configuration. With the hub legs partially collapsed, the rails 100, 102 of each side rail means can be released from the in-line configuration. Each medial rail connecting member 110 is grasped so as to squeeze the latch release mechanism 144 upwardly whereby the key cam surfaces 156, 158 (Figure 7) cammingly engage the nose portions of pin members 122, 124, at the lower edge of each nose portion, thereby causing the pin members to retract against spring pressure and clear the top of holding member 138. This releases the rails 100, 102 from the in-line configuration such that the medial rail connecting member 110 can be pushed downwardly so as to collapse the rails towards the V-shaped configuration. With the side rails collapsed, the hub member 166 is pulled upwardly so as to fully collapse the hub legs to the compact non-coplanar configuration wherein the hub legs are substantially parallel. The lower portions of the corner legs, at the support feet, are drawn inwardly towards each other. The upper ends of the corner legs are then gathered towards each other so as to fully collapse the rails in the V-shaped configuration. Thus, the corner legs move from the upstanding spread configuration shown in Figures 3 and 4 to the compact configuration shown in Figure 2. In both configurations of the corner legs, the corner legs are substantially parallel.

The foldable playyard is easily assembled, erected and collapsed. There is no need to disassemble any parts to collapse the playyard. In collapsing the playyard, the corner legs are drawn to a compact configuration by the hub legs (lower frame assembly) and side rails (upper frame assembly). There is no need to re-assemble any parts to erect the playyard. When erected, the playyard is maintained in a stable configuration with the corner legs upstanding. The corner legs are spread by the hub legs (lower frame assembly) and side rails (upper frame assembly). The playyard is foldable to a compact collapsed configuration wherein it is easily transportable from one location to another. The discrete foldable floor provides a smooth, sturdy cushioned playing surface for the child while being foldable to a box-shaped configuration for housing and transporting the collapsed playyard. If desired, fabric material fasteners, such as Velcro (Trademark) fasteners, can be used instead of snap fasteners 16, 18, 20 to secure the folded floor in the box-shaped configuration.

The support feet, corner rail connecting members, hub member, sprung collars and sprung pin members can be moulded from a rigid polymeric plastic material. The hub legs, corner legs and side rails can be made of a rigid, lightweight metal

material. The flexible fabric enclosure is easily mounted on the corner legs and side rails during assembly but is not removable thereafter. Preferably, the side rail enclosure sleeves 66, 68, 70, 72 are separated from the side rails by foam cushion sleeves 348 as shown in Figures 5 and 6.

In all embodiments of the invention, the side rails cannot be inadvertently collapsed by the child. In the embodiment shown, the side rails can be collapsed only if the hub member is first pulled upwardly so as to partially collapse the corner legs by drawing the lower portions of the corner legs radially inwardly towards the hub member, and then the latch release mechanism is operated. If the hub member is not pulled upwardly, the corner legs remain upstanding in the spread configuration and the latch release mechanism resists operation, not allowing the collapse of the side rails.

Claims

1. Apparatus for latching a pair of rails (100, 102) in substantially in-line configuration, comprising:

a medial rail-connecting member (110) disposed between said rails, each rail (100, 102) being pivotably coupled (112, 120) at one end portion (108, 118) thereof to said medial rail-connecting member (110),

and a pair of spring-biased members associated one with each rail,

characterised in that:

said spring-biased members comprise a pair of oppositely sprung pin members (122, 124), each being at least partially telescoped within one of said rail end portions (108, 118),

a holding member (138) is coupled to said medial rail-connecting member (110) between said sprung pin members (122, 124),

and each sprung pin member (122, 124) is provided with a cam surface portion (126) for cammingly contacting said holding member (138) such that said pin member can be retracted against spring pressure and with a latch surface portion for engaging said holding member (138) under spring pressure.

2. Apparatus according to claim 1, characterised by means for releasing said rails (100, 102) from said substantially in-line configuration comprising a latch release member (144) slidably coupled to said holding member (138) and having a cam surface portion (156, 158) for cammingly contacting said sprung pin members (122, 124) such that said pin members retract against spring pressure and disengage said holding member.



3. Apparatus for latching a pair of rails (100,102) in substantially in-line configuration, comprising:

a medial rail-connecting member (110) disposed between said rails, each rail (100, 102) being pivotally coupled (112, 120) at one end portion (108, 118) thereof to said medial rail-connecting member (110),

characterised in that said medial rail-connecting member comprises:

a pair of oppositely sprung pin members (122,124), each being at least partially telescoped within one of said rail end portions (108, 118) and operatively connected to said rail end portions (108, 118), said pin members being biased towards each other,

a holding member (138) coupled to said medial rail-connecting member between said sprung pin members, said holding member being capable of engaging each of said pin members to lock said pair of rails in substantially in-line configuration,

each sprung pin member (122, 124) is provided with a cam surface portion (126) for cammingly contacting said holding member (138) such that said pin member can be retracted against spring pressure and with a latch surface portion for engaging said holding member (138) under spring pressure, and

releasing means (144) slidably coupled to said holding member for releasing said pin members from said holding member so as to permit said pair of rails to release from said in-line configuration.

4. Apparatus according to claim 3, characterised in that said releasing means comprises a latch release member (144) slidably coupled relative to said holding member and having cam surface portions (156, 158) for moving said pin members (122, 124) away from each other to release engagement of said pin members from said holding member (138) when said latch release member is pushed.

5. Apparatus according to claim 4, characterised in that said medial rail-connecting member (110) is substantially U-shaped in cross-section, having a pair of opposed parallel upstanding segments joined by a horizontal segment and in that said pin members are arranged adjacent to and substantially parallel to said horizontal segment.

6. Apparatus according to claim 5, characterised in that said cam surface portions (156, 158) are V-shaped and said latch release member extends substantially perpendicularly to said pin

members, and in that said V-shaped cam surface portions push said pin members away from each other and disengage from said holding member upon movement of said latch release member towards said horizontal segment.

7. Apparatus according to claim 6, characterised in that said pin members can be pushed away from each other so that the spacing between said pin members (122, 124) is greater than the width of said holding member (138).

Patentansprüche

1. Vorrichtung zum Verriegeln eines Schienenpaares (100, 102) in im wesentlichen gestreckter Anordnung mit einem Mittel-Schienenverbindungselement (110), das zwischen den Schienen (100, 102) angeordnet ist, wobei jede Schiene (100, 102) an einem ihrer Endabschnitte (108, 118) schwenkbar mit dem Mittel-Schienenverbindungselement (110) verbunden ist (112, 120), und zwei federbeaufschlagten Elementen, von denen jedes einer Schiene zugeordnet ist, dadurch gekennzeichnet, daß die federbeaufschlagten Elemente zwei in entgegengesetzten Richtungen federbeaufschlagte Bolzen (122, 124) aufweisen, die jeweils zumindest teilweise teleskopartig in einem der Schienenendabschnitte (108, 118) eingeschoben sind, ein Halteelement (138) mit dem Mittel-Schienenverbindungselement (110) zwischen den federbeaufschlagten Bolzen (122, 124) verbunden ist, und jeder federbeaufschlagte Bolzen (122, 124) mit einem Kurvenflächenabschnitt (126) versehen ist, um das Halteelement (138) kurvenförmig zu berühren derart, daß der Bolzen gegen Federdruck zurückbewegt werden kann, und einen Verriegelungsflächenabschnitt aufweist, der mit dem Halteelement unter Federdruck in Eingriff bringbar ist.
2. Vorrichtung nach Anspruch 1, dadurch gekennzeichnet, daß Mittel vorgesehen sind, um die Schienen (100, 102) aus der im wesentlichen gestreckten Anordnung zu entriegeln, und die Mittel ein Entriegelungselement (144) für die Verriegelung aufweisen, welches verschiebbar mit dem Halteelement (138) verbunden ist und einen Kurvenflächenabschnitt (156, 158) aufweist, um die federbeaufschlagten Bolzen (122, 124) kurvenmäßig zu berühren derart, daß die Bolzen sich gegen Federdruck zurückbewegen und außer Eingriff mit dem Halteelement



ment kommen.

3. Vorrichtung zum Verriegeln eines Schienenpaares in im wesentlichen gestreckter Anordnung mit

einem Mittel-Schienenverbindungselement (110), das zwischen den Schienen angeordnet ist, wobei jede Schiene (100, 102) an einem ihrer Endabschnitte (108, 120) schwenkbar mit dem Mittel-Schienenverbindungselement verbunden ist,

dadurch gekennzeichnet, daß das Mittel-Schienenverbindungselement versehen ist mit zwei entgegengesetzt federbeaufschlagten Bolzen (122, 124), von denen jeder wenigstens teilweise teleskopartig in einem der Schienenendabschnitte (108, 118) eingeschoben und mit den Schienenendabschnitten (108, 118) wirksam verbunden ist, wobei die Bolzen in Richtung auf den jeweils anderen federbeaufschlagt sind,

einem Halteelement (138), das mit dem Mittel-Schienenverbindungselement zwischen den federbeaufschlagten Bolzen verbunden ist, wobei das Halteelement in der Lage ist, mit jedem der Bolzen zum Verriegeln des Schienenpaares in im wesentlichen gestreckter Anordnung in Eingriff zu kommen und jeder federbeaufschlagte Bolzen (122, 124) mit einem Kurvenflächenabschnitt (126) versehen ist, um das Halteelement (138) kurvenmäßig zu berühren derart, daß der Bolzen gegen Federdruck zurückbewegt werden kann, und einen Verriegelungsflächenabschnitt aufweist, der mit dem Halteelement (138) unter Federdruck in Eingriff bringbar ist, und

einem Entriegelungsmittel (144), das mit dem Halteelement zum Entriegeln der Bolzen vom Halteelement verschiebbar verbunden ist, um es dem Schienenpaar zu ermöglichen, sich aus der gestreckten Anordnung zu lösen.

4. Vorrichtung nach Anspruch 3, dadurch gekennzeichnet, daß das Entriegelungsmittel ein Entriegelungselement (144) für die Verriegelung aufweist, das am Haltemittel diesem gegenüber verschiebbar angebracht ist und Kurvenflächenabschnitte (156, 158) zum Auseinanderbewegen der Bolzen (122, 124) aufweist, um die Bolzen außer Eingriff mit dem Haltemittel (138) zu bringen, sobald das Entriegelungselement (144) für die Verriegelung verschoben wird.

5. Vorrichtung nach Anspruch 4, dadurch gekennzeichnet, daß das Mittel-Schienenverbindungselement (110) im Querschnitt im wesentlichen U-förmig ist und zwei entgegengesetzte paral-

lele aufrechtstehende Abschnitte aufweist, die durch einen horizontalen Abschnitt miteinander verbunden sind, und die Bolzen nahe dem und im wesentlichen parallel zu dem waagerechten Abschnitt angeordnet sind.

6. Vorrichtung nach Anspruch 5, dadurch gekennzeichnet, daß die Kurvenflächenabschnitte (156, 158) V-förmig ausgebildet sind und das Entriegelungselement für die Verriegelung sich im wesentlichen senkrecht zu den Bolzen erstreckt und die V-förmigen Kurvenflächenabschnitte beim Bewegen des Entriegelungselementes für die Verriegelung in Richtung auf den waagerechten Abschnitt die Bolzen auseinanderchieben und mit dem Halteelement außer Eingriff bringen.

7. Vorrichtung nach Anspruch 6, dadurch gekennzeichnet, daß die Bolzen so auseinander verschoben werden können, daß der Abstand zwischen den Bolzen (122, 124) größer ist als die Breite des Halteelementes (138).

Revendications

1. Dispositif pour verrouiller une paire de rails (100, 102) dans une configuration essentielle-ment alignée, comprenant un élément intermédiaire de connexion de rails (110) disposé entre les rails, chaque rail (100, 102) étant couplé en pivotement (112, 120), par une partie d'extrémité (108, 118) de celui-ci, avec l'élément intermédiaire de connexion de rails (110), et une paire d'éléments chargés par ressort, associés chacun à un rail, caractérisé en ce que les éléments chargés par ressort comprennent une paire d'éléments de tige poussés élastiquement en sens inverse (122, 124), chaque élément pénétrant au moins partiellement télescopiquement à l'intérieur de l'une des parties d'extrémité de rail (108, 118); un élément de maintien (138) est couplé à l'élément intermédiaire de connexion de rails (110) entre les éléments de tige poussés élastiquement (122, 124); et chaque élément de tige poussé élastiquement (122, 124) est muni d'une partie de surface de came (126) pour venir en contact de came avec l'élément de maintien (138) de façon que l'élément de tige puisse être rétracté contre la pression du ressort, et d'une partie de surface de verrouillage destinée à engager l'élément de maintien (138) sous la pression du ressort.

2. Dispositif selon la revendication 1, caractérisé en ce qu'il comprend des moyens pour libérer les rails (100, 102) de la configuration essen-



tiellement alignée, ces moyens comprenant un élément de libération de verrouillage (144) couplé en glissement à l'élément de maintien (138) et comportant une partie de surface de came (156, 158) pour venir en contact de came avec les éléments de tige poussés élastiquement (122, 124), de façon que ces éléments de tige se rétractent contre la pression du ressort et dégagent l'élément de maintien.

3. Dispositif pour verrouiller une paire de rails (100, 102) dans une configuration essentiellement alignée, comprenant un élément intermédiaire de connexion de rails (110) disposé entre les rails, chaque rail (100, 102) étant couplé en pivotement (112, 120), par une partie d'extrémité (108, 118) de celui-ci, avec l'élément intermédiaire de connexion de rails (110), caractérisé en ce que l'élément intermédiaire de connexion de rails comprend une paire d'éléments de tige poussés élastiquement en sens inverse (122, 124), chaque élément pénétrant au moins partiellement télescopiquement à l'intérieur de l'une des parties d'extrémité de rails (108, 118) et se trouvant relié en fonctionnement aux parties d'extrémités de rails (108, 118), ces éléments de tige étant poussés l'un vers l'autre ; un élément de maintien couplé à l'élément intermédiaire de connexion de rails entre les éléments de tige poussés élastiquement, l'élément de maintien étant capable d'engager chacun des éléments de tige pour verrouiller la paire de rails dans une configuration essentiellement alignée ; chaque élément de tige poussé élastiquement (122, 124) est muni d'une partie de surface de came (126) pour venir en contact de came avec l'élément de maintien (138) de façon que l'élément de tige puisse être rétracté contre la pression de ressort, et d'une partie de surface de verrouillage pour engager l'élément de maintien (138) sous la pression de ressort ; et des moyens de libération (144) couplés en glissement à l'élément de maintien pour libérer les éléments de tige de l'élément de maintien afin de permettre à la paire de rails d'être libérés de la configuration alignée.
4. Dispositif selon la revendication 3, caractérisé en ce que les moyens de libération comprennent un élément de libération de verrouillage (144) couplé en glissement par rapport à l'élément de maintien et comportant des parties de surface de came (156, 158) pour écarter les éléments de tige (122, 124) l'un de l'autre afin de libérer l'engagement des éléments de tige par rapport à l'élément de maintien (138) lorsque l'élément de libération de verrouillage est

poussé.

5. Dispositif selon la revendication 4, caractérisé en ce que l'élément intermédiaire de connexion de rails (110) présente une section transversale essentiellement en forme de U comportant une paire de segments verticaux parallèles opposés reliés par un segment horizontal, et en ce que les éléments de tige sont disposés au voisinage et sensiblement parallèlement au segment horizontal.
6. Dispositif selon la revendication 5, caractérisé en ce que les parties de surface de came (156, 158) sont en forme de V tandis que l'élément de libération de verrouillage s'étend essentiellement perpendiculairement aux éléments de tige, et en ce que les parties de surface de came en forme de V poussent les éléments de tige pour les écarter l'un de l'autre et les dégager de l'élément de maintien lorsque l'élément de libération de verrouillage se déplace vers le segment horizontal.
7. Dispositif selon la revendication 6, caractérisé en ce que les éléments de tige peuvent être poussés pour être écartés l'un de l'autre, de façon que l'espacement entre ces éléments de tige (122, 124) soit supérieur à la largeur de l'élément de maintien (138).