March 12, 1957 B. F. MORRISSETTE 2,784,765

CHILD'S SPRING SUSPENDED CHAIR

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Fig. 1

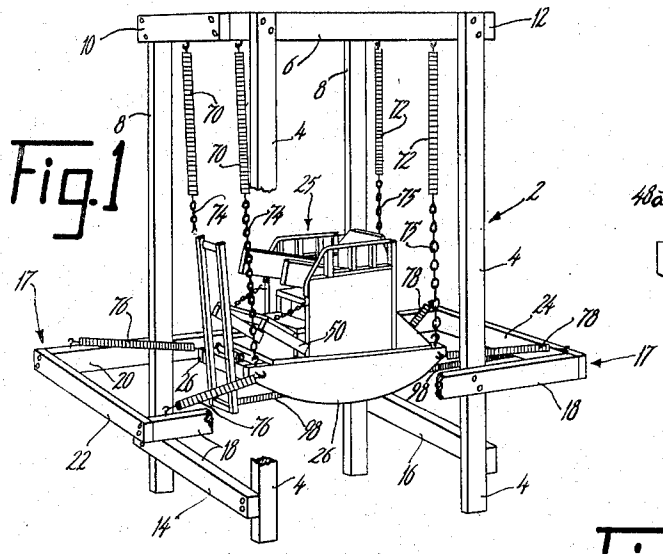


Fig. 4

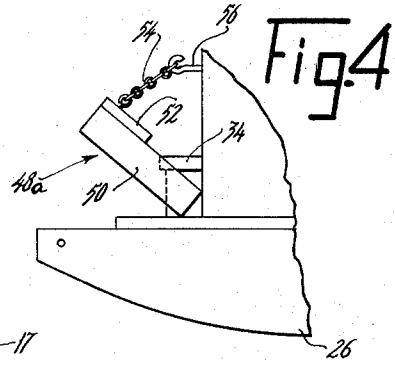


Fig. 2

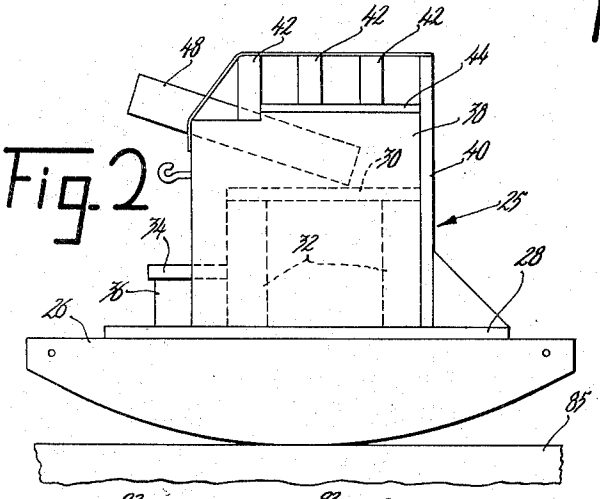


Fig. 5

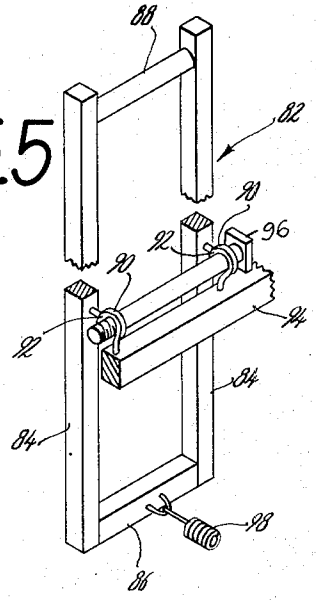


Fig. 3

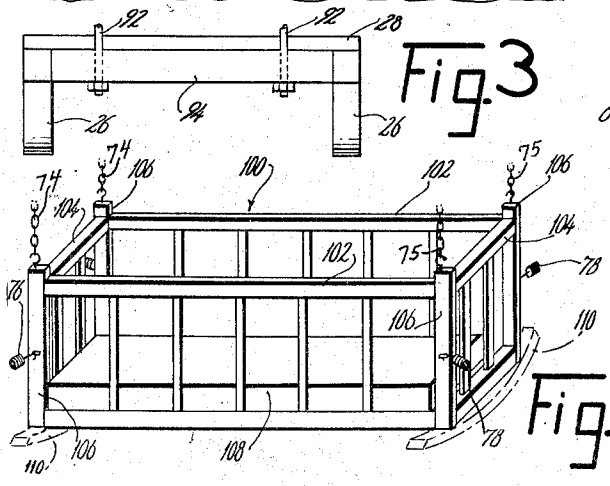


Fig. 6

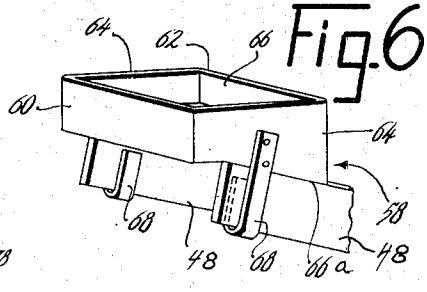


Fig. 7

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# CHILD'S SPRING SUSPENDED CHAIR

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5 Claims. (Cl. 155—18)

This invention relates to amusement devices and more particularly to amusement devices of the general class known as swings.

The principal objects of the invention are to improve the construction and mode of operation of swings and to produce a swing in which the device for supporting a child or other person is suspended and its position controlled in a novel and improved manner to give greater pleasure to the rider.

Another object of the invention is to produce a novel swing mechanism in which the device for supporting a person may be removed and a supporting device of another type may be substituted therefor quickly and easily.

Another object of the invention is to produce a swing in which the device for supporting a person consists of a chairlike structure which may be readily detached from the supporting frame of the swing and placed on a suitable support and used as a rocking chair or sled.

With the above and other objects in view the invention consists in a swing device embodying the novel and improved features, constructions and combination of parts hereinafter described and particularly pointed out in the claims, the advantages of which will be readily understood and appreciated by those skilled in the art.

The invention will be clearly understood from the accompanying drawings illustrating a swing device embodying the invention in its preferred form and the following detailed description of the constructions therein shown.

In the drawings,

Fig. 1 is a perspective view illustrating a swing device embodying the invention with certain parts of the frame broken away to show more clearly other parts of the construction.

Fig. 2 is a view in side elevation illustrating a chairlike structure forming part of the swing device shown in Fig. 1 detached from the supporting frame and resting on a horizontal supporting surface.

Fig. 3 is a detail view in front elevation illustrating a portion of the chairlike structure.

Figure 4 is a detail view in side elevation illustrating a portion of the chairlike structure and the footrest adjustably supported thereon.

Fig. 5 is a detail perspective view illustrating a lever mounted on the chairlike structure for causing forward and rearward swinging movements of said structure and certain parts associated with the lever.

Fig. 6 is a detail perspective view illustrating a tray detachably mounted on the chairlike structure and the parts of said structure upon which the tray is supported, and

Fig. 7 is a view in side elevation illustrating a crib which may be substituted for the chairlike element of the swing device shown in Fig. 1.

In the form of the invention illustrated in this application, the amusement device comprises a portable frame constructed and arranged to be set up out-of-doors



upon a lawn or indoors upon any suitable floor space. This frame, indicated as a whole at 2, comprises the lateral uprights 4 connected at their upper ends by a lateral crossbar 6, the lateral uprights 8 connected at their upper ends by a corresponding lateral crossbar (not shown) and the forward and rear crossbars 10 and 12 connecting respectively the forward and rear ends of the lateral crossbars, the said crossbars forming a substantially rectangular structure to which the upper ends of the uprights are connected.

The lateral uprights 4 and 8 at the front of the frame are connected adjacent their lower ends by a crossbar 14, and the uprights 4 and 8 at the rear of the frame are connected adjacent their lower ends by a crossbar 16.

The uprights 4 and 8 are arranged to stand on any suitable horizontal support and the swinging element is suspended from the rectangular structure connecting the upper ends of said uprights. Between the upper and lower ends of the uprights, said uprights are connected by a rectangular subframe indicated as a whole at 17 and the swinging structure is suspended in position within this subframe. This rectangular subframe comprises the lateral bars 18 and 20 connected respectively at points intermediate their ends with the lateral uprights 4 and 8 and the forward and rear crossbars 22 and 24 connecting respectively the forward ends of the bars 18 and 20 and the rear ends of said bars.

In the construction shown in Fig. 1, a chairlike device indicated as a whole at 25, is suspended in the supporting frame 2. This device comprises two substantially identical supports 26 made in the form of rockers and secured together in spaced relation. These supports or rockers 26 are secured together in this relation by means of a platform 28 spanning the rockers and having its lateral margins engaging and attached to the upper faces of the rockers by any suitable means. Mounted upon the platform 28 is a seat 30, secured upon the upper ends of the pairs of upright supports 32. Ahead of the seat is located a step 34 supported on the upper edges of two spaced plates 36 resting upon and attached to the platform 28.

The seat and the rear portion of the step are surrounded by two substantially identical spaced side walls 38 and a rear wall 40. The side walls rest at their lower ends on the platform 28 and are attached to the platform, to the seat and step structure and to the rear wall in the positions shown. The rear wall 40 also rests at its lower end on the platform 28 and is secured to the platform and to the seat structure in the position shown.

The side walls are each provided at their upper ends with spaced bars 42, two of which engage at their lower ends, a strip 44 secured to the body of the wall and the forward bar engages at its lower end in a notch in the body of the side wall. A strip preferably of polished metal extends from the front of the body of each side wall over the upper ends of the bars 42 of said wall and the upper edge of the rear wall 40 and is secured in this position. The bars 42 and the strip 44 are provided for ornamental purposes.

The rear wall 40 forms a back for the chairlike structure against which the person sitting on the seat may lean back. Secured respectively to the inner faces of the side walls 38 are two bars 48 extending forwardly beyond the walls and forming arm rests or arms for the chairlike structure.

The chairlike structure is provided with a footrest shown in Figs. 1 and 4 and indicated as a whole at 48*a*. This footrest comprises the two spaced supporting bars 50 and a crossbar 52 attached at its ends to the upper sides of the supporting bars upon which the feet of a person sitting in the chair may be placed. The foot

rest is arranged to be applied to the chairlike structure in a position such as that shown in Figs. 1 and 4 with the supporting bars embracing the step 34 and with the lower ends of said bars engaging respectively in the angles between the platform 28 and the forward edges of the side walls 38, the foot rest extending upwardly and forwardly from these angles. The footrest is adjustable angularly about the points of engagement of the lower ends of the supporting bars with the platform 28 and the side walls 38 to vary the distance of the cross bar 52 from the seat. The foot rest is supported in operative position by means of spaced chains 54 the lower ends of which are secured respectively to the ends of the cross bar 52. These chains respectively are hooked over the hooks 56 secured in the forward edges of the side walls 38. The foot rest may be adjusted toward and from the seat by hooking different links of the chains over the hooks 56.

The foot rest may be quickly and easily removed from the chairlike structure by unhooking the chains 54 from the hooks 56 and lifting the foot rest away from said structure.

The chairlike structure is also provided with a tray which is constructed so that it may readily be applied to and removed from said structure. This tray is indicated as a whole at 58. The tray comprises a four sided casing having front and rear walls 60 and 62 and side walls 64 and a lining 66 preferably made of sheet metal secured to the casing and providing the supporting surface of the tray. The tray is constructed to be removably supported on the arms 48 of the chairlike structure. To this end the end walls 64 of the casing 58 are spaced apart substantially the same distance as the arms 48 and these walls are formed with oblique lower edge portions 66*a* to fit the upper edges of the arms 48. The tray is applied to the arms 48 of the chairlike structure in the position shown in Fig. 6 with the edges 66*a* engaging the forward upper edge portions of the arms, the tray projecting a relatively short distance forwardly beyond said arms. In order to hold the tray detachably in this position, the tray is provided with holding clips 68 preferably consisting of strips of metal. These strips are each bent in a U-shape, one arm of the U being considerably longer than the other. The longer arm of each clip is secured to the outer side of one of the side walls 64 of the casing of the tray with the shorter arm on the inside as shown in Fig. 6. The clips are constructed and arranged so that they will fit over the arms 48 of the chairlike structure 25, said arms engaging in the loops in the clips 68 in the manner shown in Fig. 6.

The tray may be applied to the chairlike structure from the front thereof by sliding the same rearwardly into the position shown in Fig. 6 in which the lower edges of the walls 64 of the casing of the tray rest upon the upper edges of the arms 48 and the arms engage between said walls and the bottoms of the U-shaped portions of the clips. The tray may be removed from the chairlike structure by sliding the same forwardly to disengage arms 48 from between the walls 64 and the lower portions of the clips.

The chairlike structure 25 is suspended in the frame 2 in the manner shown in Fig. 1. This structure is yieldingly suspended in the frame by means of two pairs of coil springs 70 and 72. The springs 70 and 72 on one side of the device are connected respectively at their upper ends to the lateral cross bar 6 connecting the upper ends of the uprights 4. The other springs 70 and 72 on the other side of the device are connected respectively at their upper ends to the corresponding crossbar connecting the upper ends of the uprights 8. The connections between the springs and the crossbars are made by any suitable devices such as staples or hooks to form strong supports. The points of connection of the springs with each crossbar are equally spaced from the ends of the bar and said points on one bar are located substantially the same distance apart as the points on the other bar.



The lower ends of the springs 70 at the forward part of the device are respectively connected in any suitable manner with the upper ends of chains 74, the lower ends of which are respectively connected with the forward ends of the rockers 26. The lower ends of the springs 72 at the rear part of the device are respectively connected in any suitable manner with the upper ends of chains 75, the lower ends of which are connected respectively with the rear ends of the rockers. The lower ends of the chains are detachably connected to the rockers preferably by means of hooks secured in the rockers and hooked into the links in the several chains. These connections enable the chairlike structure to be readily detached from the suspending devices and also enables the connections between the rockers and the chains readily to be adjusted.

By the above construction the chairlike structure 25 is yieldingly suspended in the frame 2 for vertical movements. The suspending means also enables the structure 25 to be swung forwardly and rearwardly in the frame and causes a parallel motion to be imparted to the structure as it is swung, thereby maintaining said structure always in upright position.

In addition to the yielding suspension of the structure 25 in the frame 2, said structure is acted upon by an additional set of springs which normally maintain said structure yieldingly in a predetermined horizontal position longitudinally of the rectangular subframe 17 and transversely of said frame. Preferably the chairlike structure is held by the latter set of springs normally in a substantially central position between the lateral bars 18 and 20 of the rectangular frame and in a position slightly to the rear of the center between the crossbars 22 and 24 of said frame.

This set of springs comprises the forward pair of springs 76 connected respectively at their forward ends with the forward portions of the lateral bars 18 and 20 of the rectangular subframe 17 and at their rear ends respectively with the forward ends of the rockers 26 of the structure 25. This set of springs also comprises the rear pair of springs 78 connected at their rear ends respectively with the rear ends of the side bars 18 and 20 of the rectangular subframe 17 and at their forward ends respectively with the rear ends of the rockers 26. These springs thus extend in general directions diagonally of the rectangular subframe 17.

The set of springs 76, 78 not only tend to maintain the chairlike structure substantially in a predetermined preferably substantially centered position in the rectangular subframe 17 but also cushion the forward and rearward movements of said structure in the frame if these movements would otherwise be unduly accelerated. In addition to controlling the movements of the structure 25 in the manner above described these springs 76 and 78 tend to prevent any movement of said structure about a vertical axis. Also the action of the springs in cushioning the movements of the chairlike structure 25 downwardly and laterally and longitudinally of the rectangular subframe gives a very pleasing effect to the rider.

The springs 76 and 78 are preferably detachably connected to the ends of the rockers 26. This may be done by securing eye-bolts in the ends of the rockers and passing the end portions of the wires of the springs through the eyes in the bolts and securing the same thereon. The springs then may be readily detached from the rockers by removing the eyebolts.

When the springs 76 and 78 are detached from the ends of the rockers, the chairlike structure may be swung freely forwardly and rearwardly to any desired extent in the supporting frame.

The ends of the springs 76 and 78 may also be detachably connected to the lateral bars 18 and 20 of the sub-

frame 17 in any suitable manner. This permits these springs to be entirely removed from the device if desired.

The chairlike structure 25, after the disconnection of the chains 74 and 75 from the rockers 26 and the disconnection of the springs 76 and 78 from said rockers, may be entirely removed from the supporting frame 2 and set up on the ground or any other suitable horizontal supporting surface indicated at 85. When set up in this manner said structure may be used as a rocking chair.

Also, when said structure is thus detached from the frame 2, a rope or cord may be attached to the forward ends of the rockers and the structure may be used as a sled.

To enable a child or other person readily to swing the chairlike structure 25 forwardly and rearwardly against the tension of the springs 76 and 78, an operating lever is pivoted to the forward portion of said structure. This lever is indicated as a whole at 82 and comprises side bars 84 a crossbar 86 connecting the side bars at one end of the lever and a cross rod 88 connecting the side bars at the other end of the lever.

The lever 82 is pivoted to the forward end of the chairlike structure to swing on a substantially horizontal axis. To this end, screw eyes 90 are secured in the side bars 84 of the lever and correspondingly spaced screw eyes 92 are secured in a crossbar 94 located between the forward ends of the rockers 26 and attached at its ends to the rockers. The lever 82 is positioned so that the screw eyes 90 extending therefrom register with the screw eyes 92 extending from the crossbar 94 and the lever is pivoted to the crossbar to swing on a substantially horizontal axis by means of a bolt 96 passing through said screw eyes as shown in Fig. 5. The lower end portion of the lever 82 extends downwardly some distance below the crossbar 94, and the crossbar 86 at the lower end of the lever is connected by a coil spring 98 with the crossbar 24 at the rear end of the rectangular subframe 17. The crossbar 94 serves as a stop to limit the movement of the lever 82 under the action of the spring 98.

With this construction when the person sitting in the seat wishes to swing the chairlike structure forwardly and rearwardly in the frame, he grasps the crossrod 88 and pulls the same rearwardly thereby swinging the lever 82 in a clockwise direction, Fig. 1 and swinging the lower portion of the lever forwardly with relation to said structure. The coil spring 98 tends to hold the lower end of the lever 82 from forward movement with the relation to the supporting frame 2 and the chairlike structure is swung rearwardly against the tension of the springs 76 by the movement of the lever. These springs acting as a yielding check upon the movement of said structure. When the lever 82 is swung in a clockwise direction, Fig. 1, as far as desired, the lever preferably is swung back by the rider in a counterclockwise direction to its initial position with relation to the structure 25. During this movement of the lever, said structure is swung forwardly by the springs 76 and its forward movement is continued to some degree after the lever reaches its initial position, carrying said structure forward beyond the position shown in Fig. 1 against the tension of springs 78, these springs acting as a yielding check on the movement of said structure. By pumping the lever 82 back and forth, the chairlike structure may be caused to swing first rearwardly and then forwardly successively, the movement of said structure in each direction being yieldingly damped or checked by the springs 76 and 78.

If it is desired to produce a freer forward and rearward swinging movement of the structure 25 by the swinging of the actuating lever 82 in opposite directions, the springs 76 and 78 may be detached from the front and rear ends of the rockers 26, thereby relieving the said structure of the cushioning or damping action of said springs on the swinging movements of said structure. The operating lever 82 may be detached from the crossbar 94 of the



structure 25 by removing the bolt 96 from the screw eyes 90 and 92 and the spring 98 may be detached from the crossbar 24 to enable both lever and spring to be removed from the device. With these parts removed and the springs 76 and 78 detached from the structure 25, said structure may be swung freely forwardly and rearwardly upon its yielding suspending means.

Fig. 7 shows a crib or baby bed 100 which may be suspended in the supporting frame 2 instead of the structure 25. The crib shown in the drawing is provided with the usual side and end panels 102 and 104 each having a top rail, a bottom rail and spindles connecting said rails, corner posts 106 connecting the ends of rails of the side panels with the ends of the rails of the end panels and a mattress support attached to the bottom rails. The drawing shows a mattress 108 resting on the mattress support.

The crib may be yieldingly suspended in the frame 2 by connecting the lower ends of the chains 74 and 75 with the upper ends of the corner posts 106. Also the crib may be yieldingly maintained normally in a substantially central position in the rectangular subframe 17 by connecting the inner ends of the springs 76 and 78 with the corner posts 106. The chains 74 and 75 and springs 76 and 78 may be detachably connected with the crib as by means of hooks secured in the corner posts over which the links of several of the chains are hooked. This manner of suspension of the crib in the frame 2 enables the crib to be capable of substantially the same movements and its movements to be controlled in substantially the same manner as the structure 25 suspended as shown in Fig. 1.

The crib frame may be provided with rockers as shown in dot and dash lines and indicated at 110 to form a cradle if desired.

It is to be understood that except as defined in the claims the invention is not limited to the particular construction and arrangement of parts of the illustrated form of the invention, but that the construction shown is merely illustrative of the invention and that the invention may be embodied in other forms within the scope of the claims.

Having explained the nature and object of the invention and having specifically described a construction embodying the invention in its preferred form, what is claimed is:

1. An amusement device having, in combination, a framework comprising a series of spaced uprights, means for securing together the upper ends of said uprights, in spaced relation, a rectangular subframe secured to and supported by said uprights in substantially horizontal position intermediate between the upper and lower ends of said uprights, a chairlike structure mounted within said rectangular subframe and three or more springs attached at their upper ends respectively at horizontally separated points to said framework above said subframe and connected at their lower ends respectively at horizontally separated points to the chairlike structure to suspend yieldingly the said structure for forward and rearward parallel swinging movements in said subframe longitudinally thereof, the subframe enclosing the path of swinging movement of said structure, and means mounted on said structure and connected with said subframe for manual actuation by a person sitting in said structure to impart swinging movements to said structure.

2. An amusement device having, in combination, a framework comprising a series of spaced uprights, means for securing together the upper ends of said uprights, in spaced relation, a rectangular subframe secured to and supported by said uprights in substantially horizontal position intermediate between the upper and lower ends of said uprights, a chairlike structure mounted within said rectangular subframe, three or more springs attached at their upper ends respectively at horizontally separated points to said framework above said subframe and connected at their lower ends respectively at horizontally

separated points to the chairlike structure to suspend yieldably the said structure for forward and rearward parallel swinging movements in said subframe longitudinally thereof, the subframe enclosing the path of movement of said structure, three or more springs attached at their outer ends respectively to said subframe at horizontally separated points thereon and attached at their inner ends respectively to horizontally separated points on the chairlike structure for maintaining said structure yieldingly in substantially central position in the subframe and to hold the same yieldingly from rotating about a vertical axis.

3. An amusement device having, in combination, a framework comprising a series of uprights, means for securing together the upper ends of said uprights, a rectangular subframe secured to and supported by said uprights in substantially horizontal position intermediate between the upper and lower ends of said uprights, a chairlike structure mounted within said rectangular subframe, three or more springs attached at their upper ends respectively at horizontally separated points to said framework above said subframe and connected at their lower ends respectively at horizontally separated points to the chairlike structure to suspend yieldingly the said structure for parallel forward and rearward swinging movements in said framework, a lever pivoted to said structure and a connection between the lever and the subframe for producing swinging movements of said structure by the swinging movements of the lever.

4. An amusement device having, in combination, a framework comprising a series of spaced uprights, means for securing together the upper ends of said uprights, in spaced relation, a rectangular subframe secured to and supported by said uprights in substantially horizontal position intermediate between the upper and lower ends of said uprights, a chairlike structure mounted within said rectangular subframe, three or more springs attached at their upper ends respectively at horizontally separated points to said framework above said subframe and connected at their lower ends respectively at horizontally separated points to the chairlike structure to suspend yieldingly the said structure for parallel forward and rearward swinging movements in said framework, a lever pivoted to said structure and a spring connecting the lever with the subframe to cause forward and rearward swinging movements to be imparted to said structure by the swinging movements of the lever.



5. An amusement device having, in combination, a framework comprising a series of spaced uprights, means for securing together the upper ends of said uprights in spaced relation, a polygonal subframe secured to and supported by said uprights in a substantially horizontal position intermediate between the upper and lower ends of said uprights, a chairlike structure suspended within said subframe, four springs attached at their upper ends respectively at horizontally separated points to said framework above said subframe and connected at their lower ends respectively at horizontally separated points to the chairlike structure to furnish four point supports for said structure to suspend yieldingly the said structure for parallel movements in said subframe the subframe enclosing the path of movement of said structure springs attached at their outer ends respectively to said enclosing subframe at horizontally separated points thereon and attached at their inner ends respectively to horizontally separated points on the chairlike structure for maintaining said structure yieldingly in substantially central position in the subframe and to hold the same yieldingly from rotating about a vertical axis.


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