Sept. 9, 1969 R. O. BOYKIN, JR 3,466,031

JOUNCING BOARD

Original Filed Sept. 22, 1965

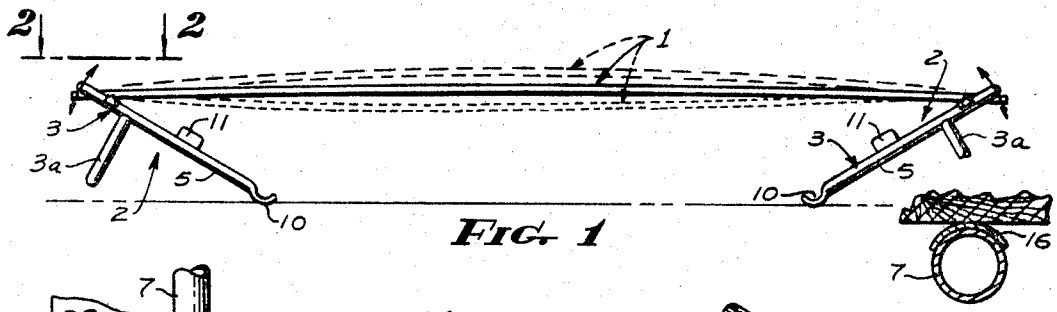


FIG. 1

FIG. 5

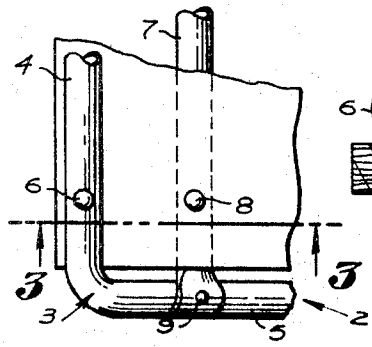


FIG. 2

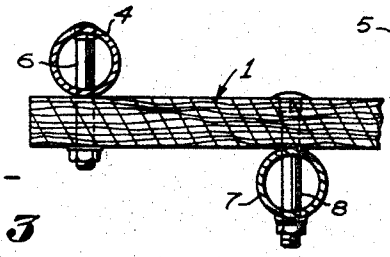


FIG. 3

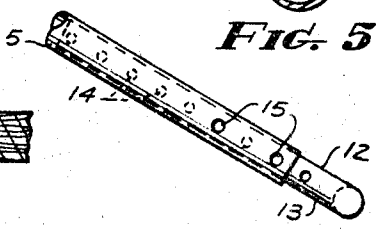


FIG. 4

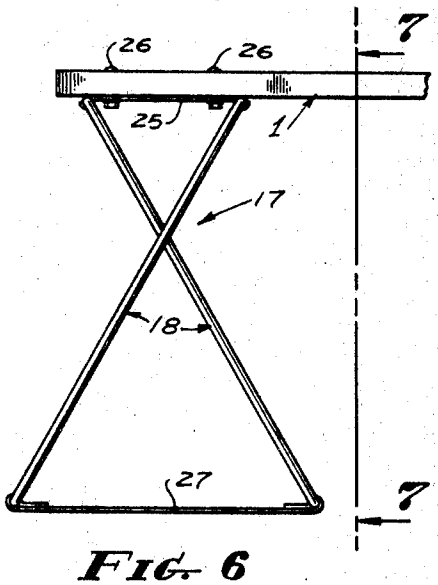


FIG. 6

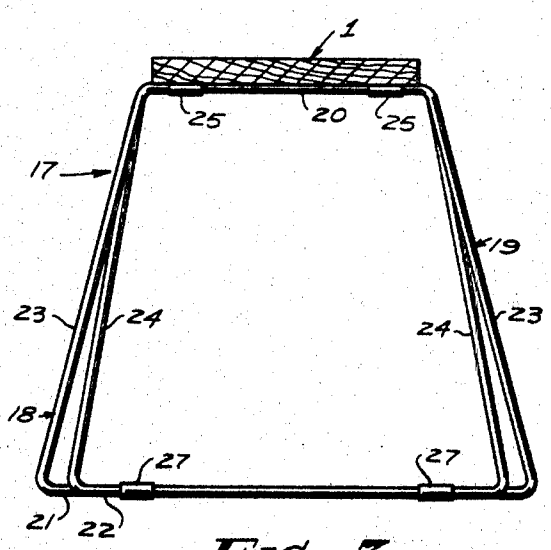


FIG. 7

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JOUNCING BOARD

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ABSTRACT OF THE DISCLOSURE

A jouncing board having special supporting structures at its ends, which are secured against displacement relative to the board when the ends of the board flex upwardly and downwardly, and consequently, move to and from each other. One embodiment accomplishes this result by pairs of struts which converge toward each other, each pair of struts being connected by an upper bar extending over the end of the board and the other extending under the board in offset relation, both cross bars being firmly secured to the board, with the result that the struts permit the flexing and displacement movements of the board. The other embodiment accomplishes this result by use of a pair of crossed frames at each end of the board connected by a plate secured to the board, the frames being unattached at their cross points to permit the flexing and displacement movements of the ends of the board.

This invention relates to jouncing boards. A jouncing board is standard equipment in kindergartens and nursery schools. Conventionally, the jouncing board is about 1" x 12" x 10'. Each end rests on a block support about one foot high. Children jump on the board causing the board to deflect and rebound. Each jump tends to displace the board slightly, so that after every few jumps the board must be replaced on the supporting blocks to prevent its falling off.

If the board is rigidly attached to the supporting blocks or hinged thereto, the action of the board is impaired due at least in part, to the fact that the effective length of the board between supports varies as the board is alternately deflected and straightened.

A primary object of the present invention is to provide a jouncing board, more particularly, end supports which, though secured to the ends of the board, and, if desired, also secured to an underlying surface, permit free movement of the board.

A further object is to provide a jouncing board, one embodiment of which utilizes end supports secured rigidly to the ends of the board and including struts extending downwardly and inwardly from the ends of the board so that as the board is bowed in one direction, the struts pivot, relatively to the underlying surface on which they rest, in the opposite direction thereby compensating for the change in the effective length of the board.

A still further object is to provide a jouncing board, another embodiment of which utilizes end supports, each comprising a pair of downwardly converging, crossing and diverging strut frames secured at their upper ends to the board and linked together at their lower ends so that the plane defined by the upper ends of the strut frames may tilt and displace freely as the board is deflected, thereby compensating for change in the effective length of the board.

With the above and other objects in view as may appear hereinafter, reference is directed to the accompanying drawings in which:

FIGURE 1 is a side view showing one form of the jouncing board.

FIGURE 2 is an enlarged fragmentary plane view showing one end thereof.

FIGURE 3 is a further enlarged fragmentary sectional view taken through 3—3 of FIGURE 2.

FIGURE 4 is a fragmentary view showing the lower end of a modified form of strut employed to support the jouncing board member.

FIGURE 5 is a fragmentary sectional view showing a means for changing the angular relation of the strut to the jouncing board member.

FIGURE 6 is a fragmentary side view showing a modified form of support for the jouncing board.

FIGURE 7 is a transverse sectional view thereof taken through 7—7 of FIGURE 6.

The jouncing board includes a board member **1**. A convenient size is a 1" x 12" board 10 feet long. The board may be straight grained wood or may be plywood or may be formed of fiberglass. The essential requirement is that the board be flexible and resilient when supported at its extremities and capable of supporting the impact of a child jumping on the center of the board.

Reference is first directed to FIGURES 1 through 3 wherein the board is provided with end supports **2**. Each support includes a tubular U-shaped frame **3** having a cross member **4** and parallel struts **5**. The cross member extends across the upper side of the board adjacent an end thereof and is secured thereto by bolts **6**. A crossbar **7** extends between the struts **5** parallel to the cross member **4** and under the board **1**.

The crossbar is tubular and secured to the board by bolts **8**. The extremities of the crossbar **7** are flatened and curved into conformity to the struts **5** and is secured by any suitable means **9**, such as rivets or bolts; or, if desired, the cross bar may be welded to the struts.

The struts extend downwardly tnd inwardly with respect to the ends of the board **1** and are provided at their lower extremities with curved feet **10**.

Operation of the jouncing board is as follows:

The end supports position the board at about one foot from the underlying surface. When a child jumps on the board, the board is deflected as indicated by the broken and dotted lines in FIGURE 1. In order for the board to move freely, the ends thereof must move to and from each other a slight amount, and in addition, the ends of the board must tilt. The end supports permit this movement while being firmly attached to the board. In effect, the supports rock about the feet **10**. If desired, the lower extremities of the strut may be fastened to an underlying surface by means which will permit rocking movement of the feet **10**; however, in practice, it is desirable that the jouncing board be portable, therefore, it is preferred that the feet merely rest on the underlying surface.

By reason of the fact that very little of the motion of the board member is transmitted to the feet **10**, the displacement of the jouncing board, when in use, is minimal. This movement may be further reduced by securing weights **11** between the struts of each end support. Also, to prevent excessive tilting of the board should one stand at an end thereof, posts **3a** may be provided.

It is sometimes desirable that the length of the struts be adjustable. This may be accomplished as shown in FIGURE 4 by omitting the curved feet **10** and providing a U-shaped extension **12** for each end support. The extension includes struts **13** which telescope into the struts **5**, perforations **14** are provided and arranged to receive bolts **15** so that the U-shaped extension **12** may be adjusted with respect to the U-shape frame **3**.

It is sometimes desirable to vary the angular relationship of the U-shaped frame **3** with respect to the board member **1**. This may be done by use of shims **16** placed between the crossbar **7** and the board member as shown in FIGURE 5.

Reference is now directed to FIGURES 6 and 7 which illustrate a modified form of end support **17**. Each end support comprises a pair of trapezoidal frames **18** and **19**. The frames include upper cross members **20** of equal length and lower cross members **21** and **22** are different lengths. The cross members are joined by side struts **23** and **24** joined respectively to the cross members **21** and **22**.

The trapezoidal frames are disposed so that the struts **23** and **24** cross intermediate their ends, however, by reason of the different lengths of the lower cross members **21** and **22**, the struts clear each other in the regions in which they cross.

The upper cross members **20** of each pair of trapezoidal frames are disposed in parallel relation to each other and in transverse relation to the board member **1** and are held in spaced relation by connecting straps **25** which are secured to the board member by bolts **26**. Similarly, the lower cross members **21** and **22** are held in spaced parallel relation by connecting straps **27**.

The modified jouncing board permits the same freedom of movement of the board member as in the first structure; that is, the trapezoidal frames **18** and **19** permit the extremities of the board member to tilt as the board is caused to bow and also to permit limited elongation and contraction of the effective length of the board as the board is bowed.

While particular embodiments of this invention have been shown and described, it is not intended to limit the same to the details of the constructions set forth, but instead, the invention embraces such changes, modifications and equivalents of the various parts and their relationships as come within the purview of the appended claims.

I claim:

1. A jouncing board, comprising:

(a) a board member intended to bend upwardly and downwardly, when a user jumps thereon, causing the ends of the board to displace horizontally to and from each other and to tilt alternately in an upward and a downward direction;

(b) a pair of end supporting structures for supporting said board member in a normally horizontal position above an underlying surface;

(c) each of said end supporting structures including a lower end carrying means for rocking in an essentially fixed position on said underlying surface, an upper end secured to an end portion of said board to tilt and displace horizontally therewith, and downwardly converging struts connecting said ends and permitting said upper end to move relative to said lower end in full compliance with the tilting and horizontal movement of said board.

2. A jouncing board, comprising:

(a) a board member intended to bend upwardly and downwardly, when a user jumps thereon, causing the ends of the board to displace horizontally to and from each other and to tilt alternately in an upward and a downward direction;

(b) a pair of end supporting structures for supporting said board member in a normally horizontal position above an underlying surface;

(c) each of said end supporting structures including a lower end adapted to rest in an essentially fixed position on said underlying surface, an upper end secured to an end portion of said board to tilt and displace horizontally therewith, said upper end having parallel bars overlying and underlying an end portion of said board member to tilt and displace horizontally therewith, and downwardly converging struts connecting said ends and permitting said upper end to move relative to said lower end in full compliance with the tilting and horizontal movement of said board member.

3. A jouncing board, comprising:

(a) a board member intended to bend upwardly and downwardly, when a user jumps thereon, causing the ends of the board to displace horizontally to and from each other and to tilt alternately in an upward and a downward direction;

(b) a pair of end supporting structures for supporting said board member in a normally horizontal position above an underlying surface;

(c) each of said end supporting structures including a lower end adapted to rest in an essentially fixed position on said underlying surface, an upper end secured to an end portion of said board to tilt and displace horizontally therewith, and means connecting said ends and permitting said upper end to move relative to said lower end in full compliance with the tilting and horizontal movement of said board;

(d) each of said end supporting structures including a pair of struts which cross intermediate their ends without interconnection, and links pivotally receiving the extremities of the struts for movement about axes parallel and transverse to said board member, the links at the lower ends of said struts defining means for rocking on said underlying surface.

4. The combination with a jouncing board intended to bend upwardly and downwardly when a user jumps thereon, causing the ends to tilt alternately in an upward and a downwrad direction, with attendant longitudinal displacement of the ends of the board to and from each other of end supporting means comprising:

(a) a pair of end supporting structures including downwardly converging struts adapted to be secured at the ends of said jouncing board for supporting said board member in a normally horizontal position above an underlying surface, said struts having lower ends carrying means for rocking on said underlying surface;

(b) and connecting means between each supporting structure and said board, said means securing said supporting structures against longitudinal displacement relative to said board; said supporting structures being adapted to permit longitudinal displacement and flexure of said board.

5. The combination with a jouncing board intended to bend upwardly and downwardly when a user jumps thereon, causing the ends to tilt alternately in an upward and a downward direction, with attendant longitudinal displacement of the ends of the board to and from each other of end supporting means comprising:

(a) a pair of parallel bars overlying and underlying the ends of said jouncing board and secured thereto;

(b) downwardly converging struts extending from said bars to an underlying surface to support said jouncing board in a horizontal position;

(c) and means at the lower extremities of said struts for rocking on said underlying surface, thereby to permit longitudinal displacement and flexure of said board.

6. The combination with a jouncing board intended to bend upwardly and downwardly when a user jumps thereon, causing the ends to tilt alternately in an upward and a downward direction, with attendant longitudinal

displacement of the ends of the board to and from each other of end supporting means comprising:

(a) a pair of struts at each end of said board which cross intermediate their ends without interconnection;

(b) upper and lower links pivotally connecting each pair of struts at their ends for movement about axes parallel and transverse to said jouncing board, the upper links being secured to said jouncing board; said struts thereby permitting longitudinal displacement and flexure of said board.

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