

Jan. 29, 1963

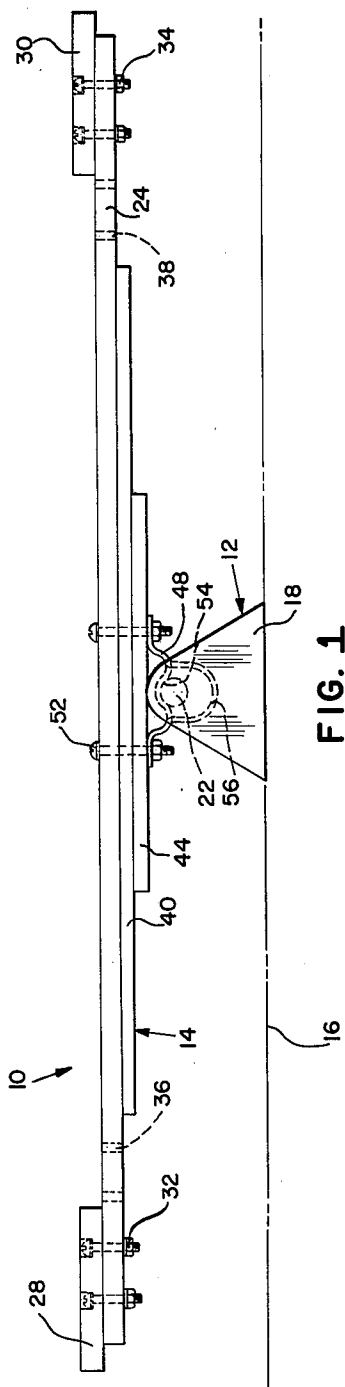
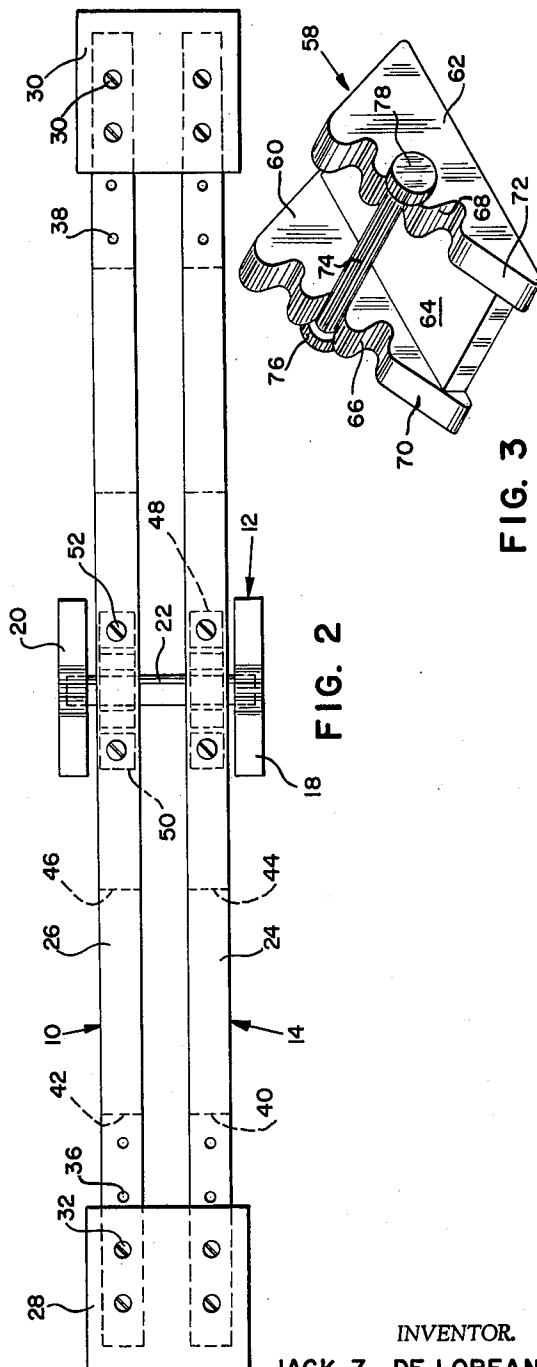
J. Z. DE LOREAN

3,075,764

ACROBATIC TOY

Filed Aug. 3, 1961

2 Sheets-Sheet 1



INVENTOR.
JACK Z. DE LOREAN
BY
WILSON, SETTLE & CRAIG
ATTORNEYS

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J. Z. DE LOREAN

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2 Sheets-Sheet 2

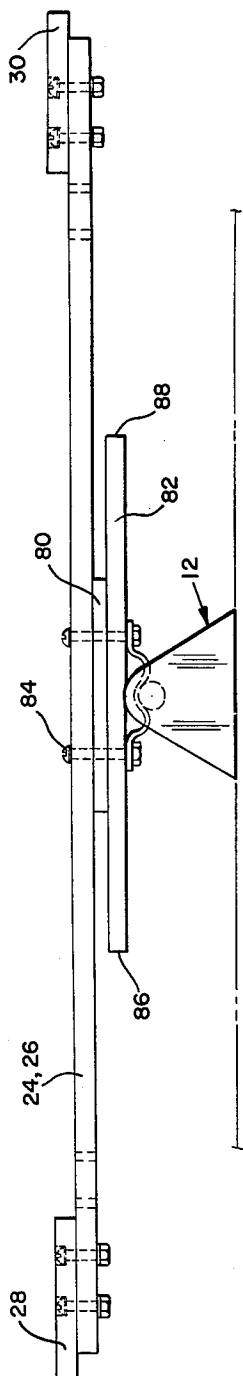


FIG. 4

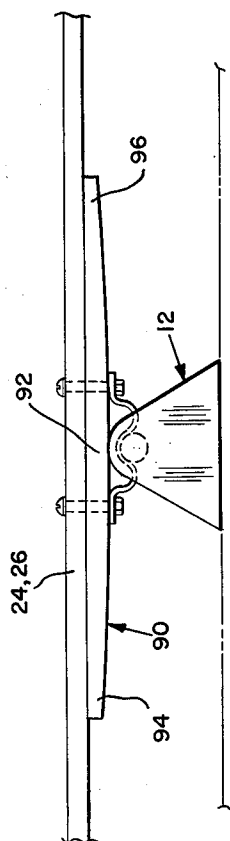


FIG. 5

INVENTOR.
JACK Z. DE LOREAN
BY
WILSON, SETTLE & CRAIG
ATTORNEYS

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3,075,764

ACROBATIC TOY

Jack Z. De Lorean, Huntington Woods, Mich., assignor
of one-half to Charles J. De Lorean
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The present invention relates to an acrobatic toy, and more particularly to a jumping device for use by two people in which the participants are alternately propelled upwardly into the air as a result of actuation of the device by the other participant.

The present device is comparable to a trampoline. The trampoline has recently enjoyed wide spread popularity as a recreational device. Trampolines comprise a sheet of fabric material mounted on springs over a pit in the ground. In use, a person stands on the fabric and jumps into the air. Upon landing, the mounting springs are stretched, and upon returning to their normal spring position, cause the person on the trampoline to be thrown into the air. This process is repeated until the person is thrown into the air to a height which permits him to do acrobatic tricks. The present invention provides a device similar in function to the trampoline but which may be used by two persons at the same time and which is relatively inexpensive, permitting ownership by a family of moderate means.

It is an object of the invention to provide an acrobatic toy device in the general shape of a teeter-totter.

Another object of the invention is to provide such a device having a platform at each end for a person to stand on.

A further object of the invention is to provide a reinforced spring portion at the center of the device to cause upward propulsion of one end of the device when the other end strikes the ground.

A further object of the invention is to provide means for shifting the platforms longitudinally to compensate for differences in weight of the users.

Another object is to provide, in one embodiment, a base which permits mounting of the device at different vertical levels.

A still further object of the invention is to provide in one embodiment a spring construction in which the forces on the spring are distributed to avoid spring damage.

Other objects of this invention will appear in the following description and appended claims, reference being had to the accompanying drawings forming a part of this specification wherein like reference characters designate corresponding parts in the several views.

In the drawings:

FIGURE 1 is a side elevational view of one embodiment of the acrobatic toy of the present invention;

FIGURE 2 is a top plan view of the acrobatic toy of FIGURE 1;

FIGURE 3 is a view in perspective of a second embodiment of the base for the device of FIGURE 1 which permits mounting of the spring portion at different vertical levels;

FIGURE 4 is a side elevational view of a second embodiment of the acrobatic toy wherein the spring means are modified to distribute the force on the spring after initial springing; and

FIGURE 5 is a side elevational view of another embodiment of the spring construction.

Before explaining the present invention in detail, it is to be understood that the invention is not limited in its application to the details of construction and arrangement of parts illustrated in the accompanying drawings, since the invention is capable of other embodiments and of being practiced or carried out in various ways. Also, it

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is to be understood that the phraseology or terminology employed herein is for the purpose of description and not of limitation.

Referring to FIGURES 1 and 2, it may be seen that the acrobatic toy 10 comprises a base 12 upon which is mounted an elongated springboard 14. The base, which rests on the surface 16 of the ground, includes a pair of generally triangular upright support members 18, 20 which are spaced apart by a circular pivotal support bar 22 mounted between the apexes of the triangles.

The springboard 14 is pivotally mounted intermediate its ends on the bar 22. The springboard includes a pair of spaced apart elongated wooden board elements 24, 26. A platform 28, 30 is mounted at each end of the boards by bolt structures 32, 34. The upper surfaces of the platforms are preferably provided with an abrasive material to insure firm footing. Additional openings 36, 38 are provided in the boards 24, 26 in front of the platforms to permit positioning of either or both of the platforms closer to the pivot point of the springboard. Such positioning reduces the lever advantage and compensates for difference in weight of the persons using the device.

A reinforcing spring structure is provided for the boards 24, 26. This structure includes a board 40, 42 of intermediate length beneath the boards 24, 26 and a small board 44, 46 provided beneath each of the boards 40, 42. A pivot support bracket 48, 50 is positioned beneath each board 44, 46 and the entire assembly is secured together by bolt structures 52. The brackets 48, 50 have circular recesses 54 for pivotal mounting on the bar 22. A U-shaped strap 56 is provided on each bracket 48, 50 and extends around the bar 22 to prevent separation of the base and springboard during use.

In operation, one person stands on each of the platforms 28, 30. By a shift in weight, the springboard is caused to pivot about the bar 22. When one end of the springboards strikes the ground surface 16, the opposite end is caused to whip or be sprung upwardly by the action of the spring structure. This throws the person standing on this end of the springboard upwardly into the air. When that person comes down, he lands on his platform causing the springboard to pivot in the opposite direction, thus throwing the second person into the air. This process is repeated, and with each successive pivoting the participants are thrown higher and higher. With practice, it is possible to rise to a height exceeding three feet. When the participants are being propelled several feet into the air, it is possible for them to perform acrobatic tricks such as turns in the air and somersaults.

While the spring structure of the springboards has been described in terms of wooden boards, it will be readily apparent that other spring materials, such as steel leaf springs and the like could be substituted for the boards.

FIGURE 3 illustrates a modified base structure 58 for use in connection with the springboard of FIGURE 1. The base 58 has a pair of spaced apart triangular members 60, 62 which are secured together by support member 64. A plurality of vertically stepped recesses 66, 68 are provided in one of the upwardly slanting edges 70, 72 of each member 60, 62. Each pair of oppositely disposed recesses 66, 68 is adapted to receive a pivotal support bar 74. The bar 74 is provided with an enlarged portion 76, 78 at each end to retain it within the recesses. The bar may be placed in any pair of recesses to thus permit vertical adjustment thereof. After the bar has been set in a pair of recesses, the springboard 14 is mounted thereon to complete the structure. As will be readily appreciated, the lower the bar is placed, the less spring will be possible with the device. More skillful players prefer the upper position of the bar while novices and young children use the bar in a lower position.

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FIGURE 4 illustrates a second spring arrangement for the springboard. In the FIGURE 4 embodiment, the base 12 and springboard elements 24, 26 and platforms 28, 30 are arranged as previously described. However, a small board 80 is placed next adjacent the main board and a board 82 of intermediate length is positioned beneath the small board 80. The entire structure is secured together by bolt structures 84.

In operation of the FIGURE 4 embodiment, when the boards 24, 26 have been deflected a predetermined degree, they will contact the outer ends 86, 88 of the intermediate length boards 82. At this time, the stress point on the spring system will be shifted to the outer ends of the intermediate length boards 82 to limit the stress-concentration applied to the main boards 24, 26.

FIGURE 5 illustrates a third embodiment of the spring structure for the device. In FIGURE 5, the base 12 and long boards 24, 26 are constructed as in the FIGURE 1 embodiment. However, use of two boards for the spring portion is eliminated and one board 90 is substituted therefor. As will be noted, the board 90 is thickest at the center 92 and tapers to thinner sections at the outer ends 94, 96. The configuration of the board 90 results in a spring action similar to the spring action of the boards 40-46 of the FIGURE 1 embodiment.

Having thus described my invention, I claim:

1. An acrobatic toy comprising a base adapted to be seated on a horizontal support surface; an elongated springboard pivotally mounted intermediate its ends on the base for vertical pivoting; structure at each end of the springboard for a person to stand upon; the pivot point of the springboard being positioned above the horizontal support surface a height to permit the ends thereof to strike said support surface during pivoting; a spring structure in contacting relation with the underside of the springboard intermediate the ends of the springboard to cause one end of the springboard to be sprung upwardly when the other end strikes the horizontal support surface whereby the person standing on the upwardly sprung end will be propelled into the air.

2. An acrobatic toy comprising a base adapted to be seated on a horizontal support surface; an elongated springboard pivotally mounted intermediate its ends on the base for vertical pivoting; structure at each end of the springboard for a person to stand upon; the pivot point of the springboard being positioned above the horizontal support surface a height to permit the ends thereof to strike said support surface during pivoting; said springboard having a leaf spring structure intermediate its ends to cause one end of the springboard to be sprung upwardly when the other end strikes the horizontal support surface whereby the person standing on the upwardly sprung end will be propelled into the air.

3. An acrobatic toy comprising a base adapted to be seated on a horizontal support surface; a vertically adjustable support member on the base; an elongated springboard pivotally mounted intermediate its ends on said support member for vertical pivoting; structure at each end of the springboard for a person to stand upon; said support member being positioned above the horizontal support surface a height to permit the ends of the springboard to strike said support surface during pivoting; a spring structure in contacting relation with the underside of the springboard intermediate the ends of the springboard to cause one end of the springboard to be sprung upwardly when the other end strikes the horizontal support surface whereby the person standing on the upwardly sprung end will be propelled into the air.

4. An acrobatic toy comprising a base adapted to be seated on a horizontal support surface; an elongated springboard pivotally mounted intermediate its ends on the base for vertical pivoting; platform structure at each end of the springboard for a person to stand upon; said platform structure being adjustable along the springboard to vary the leverage, with respect to the pivot point, of a

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person standing on the platform structure; the pivot point of the springboard being positioned above the horizontal support surface a height to permit the ends thereof to strike said support surface during pivoting; a spring structure in contacting relation with the underside of the springboard intermediate the ends of the springboard to cause one end of the springboard to be sprung upwardly when the other end strikes the horizontal support surface whereby the person standing on the upwardly sprung end will be propelled into the air.

5. An acrobatic toy comprising a base adapted to be seated on a horizontal support surface; an elongated springboard pivotally mounted intermediate its ends on the base for vertically pivoting; structure at each end of the springboard for a person to stand upon; the pivot point of the springboard being positioned above the horizontal support surface a height to permit the ends thereof to strike said support surface during pivoting; said springboard having a spring portion intermediate its ends comprising a plurality of overlaid spring elements of successively shorter lengths; said spring structure causing one end of the springboard to be sprung upwardly when the other end strikes the horizontal support surface whereby the person standing on the upwardly sprung end will be propelled into the air.

6. An acrobatic toy comprising a base adapted to be seated on a horizontal support surface; an elongated springboard pivotally mounted intermediate its ends on the base for vertical pivoting; structure at each end of the springboard for a person to stand upon; the pivot point of the springboard being positioned above the horizontal support surface a height to permit the ends thereof to strike said support surface during pivoting; said springboard having a spring portion intermediate its ends comprising a first elongated spring member secured to the undersurface of the springboard and centered over the pivot point of the springboard; a second elongated spring member mounted beneath the first spring member; said second spring member being longer than the first spring member whereby the ends thereof extend beyond the ends of the first spring member and are spaced from the undersurface of the springboard; said spring members causing one end of the springboard to be sprung upwardly when the other end strikes the horizontal support surface whereby the person standing on the upwardly sprung end will be propelled into the air; said second spring member acting, upon contact of one of its ends with the undersurface of the springboard, to shift the stress point and limit the stress applied to the springboard.

7. An acrobatic toy comprising a base adapted to be seated on a horizontal support surface; an elongated springboard pivotally mounted intermediate its ends on the base for vertical pivoting; structure at each end of the springboard for a person to stand upon; the pivot point of the springboard being positioned above the horizontal support surface a height to permit the ends thereof to strike said support surface during pivoting; said springboard having a spring portion intermediate its ends comprising an elongated spring member which is thicker at its midsection than at its ends; said spring portion causing one end of the springboard to be sprung upwardly when the other end strikes the horizontal support surface whereby the person standing on the upwardly sprung end will be propelled into the air.

8. An acrobatic toy comprising a base adapted to be seated on a horizontal support surface; a pivot bar on the base; an elongated springboard comprising spaced apart elongated elements joined together at each end by a platform structure for a person to stand upon; a leaf spring structure mounted beneath each of the elongated elements; a pivot support bracket mounted to the undersurface of each leaf spring structure; said springboard being pivotally mounted on the base with the pivot support bracket seated on the pivot bar; the pivot point of the springboard being

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positioned above the horizontal support surface a height to permit the ends thereof to strike said support surface during pivoting; striking of the support surface causing one end of the springboard to be sprung upwardly through the action of the leaf spring structure whereby the person standing on the upwardly sprung end of the springboard will be propelled into the air. 5

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