Oct. 28, 1969 J. F. MUTTER ET AL 3,475,019

TILTING-PLATFORM PLAYGROUND TOY

Filed Feb. 2, 1967

Fig. 5.

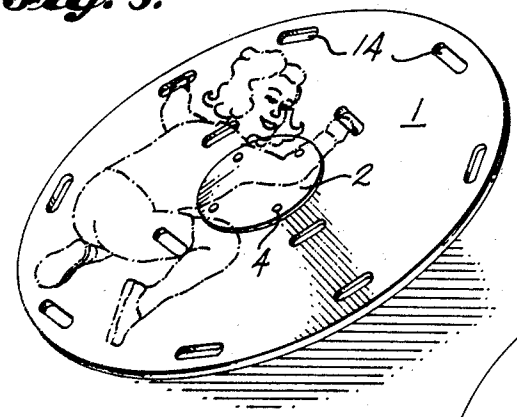


Fig. 1.

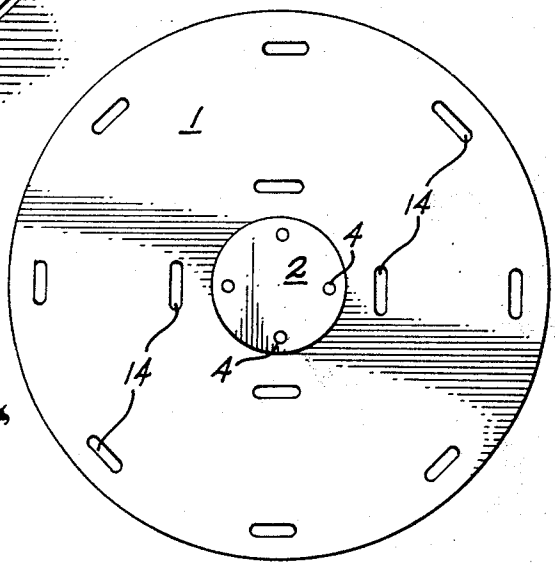


Fig. 2.

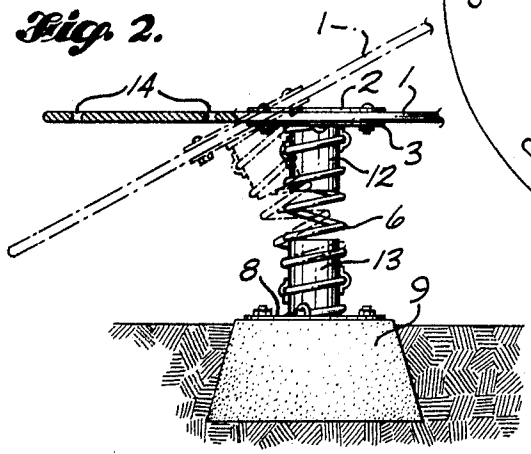


Fig. 3.

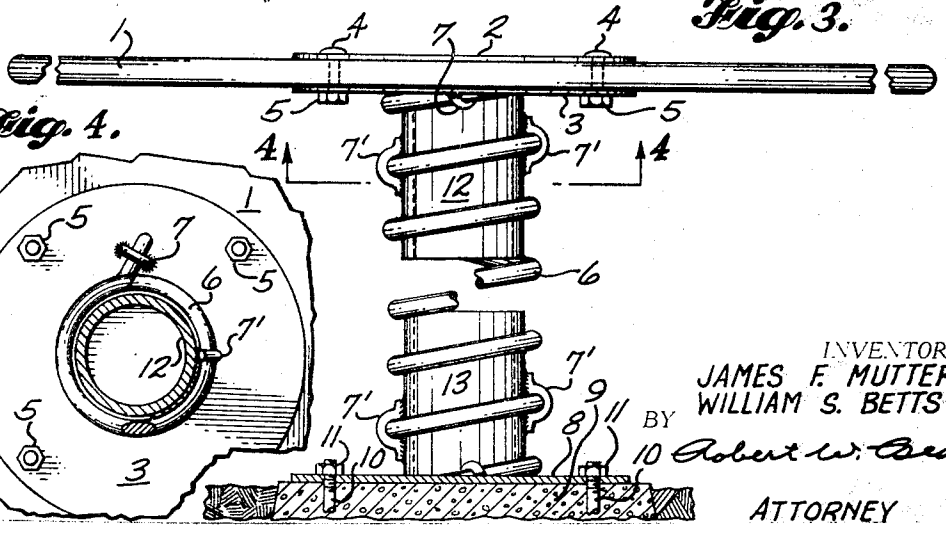


Fig. 4.

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TILTING-PLATFORM PLAYGROUND TOY

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U.S. Cl. 272—55 1 Claim

ABSTRACT OF THE DISCLOSURE

A playground toy includes a large disk which is supported horizontally above the ground by a relatively slender stiff spring. A boss extends down from the disk and a boss projects up from a base into the upper and lower ends of the spring, respectively. The adjacent ends of the bosses are spaced apart and at least one free turn of the spring encircles the end of each boss, which turns can slide lengthwise of the bosses as the load on the disk changes.

Seesaws are popular playground toys, but they are a source of potential injury to children in three ways. In normal position a seesaw is tilted with one end resting on the ground and the other end extending upward a substantial distance above the ground. Consequently, a small child may be playing or standing beneath the raised seesaw, or he may walk under the raised end when the toy is in use so that, when the lower end is raised, such child would be struck by the descending opposite end and seriously injured. When two children are playing on the seesaw, a child on the lower end may suddenly jump off the seesaw board and a child on the opposite end would be dropped suddenly to the ground. Or the first child, as he nears the lowermost position, may jerk the end down to suddenly and sharply hit the ground, causing the other child to be severely jarred or even to be bounced off the raised end of the board and fall to the ground. Consequently, it is a principal object of the present invention to provide a playground toy which can be tilted and rocked by children playing on it, but which will not injure children playing on or near the toy.

Another disadvantage of a seesaw is that a single child cannot play on it alone because he must have a companion at the opposite end of approximately equal weight in order to balance and operate the toy. Therefore, it is an additional object to provide a tilting toy which can be operated by one child, two children or even several children.

A further object is to provide a toy which appeals to and can be used by children in a broad age or size range, such as from nursery school to junior high school children.

Another important object is to provide a playground toy which is economical to manufacture and easy to install.

The foregoing objects can be accomplished by a tilting toy having a large, flat platform or disk mounted substantially parallel to and spaced from the ground by a helical spring. The disk is large enough to hold several children and is provided with a plurality of slots forming handholds. The spring is sufficiently stiff to support the disk in substantially horizontal position when several children are on the disk with even weight distribution about the disk's center, but which is sufficiently yielding to permit the disk, at least to some extent, to be tilted by the unbalanced weight of a single child on the disk.

FIGURE 1 is a top plan of the present invention.

FIGURE 2 is a side elevation having parts in section and parts broken away. FIGURE 3 is an enlarged side elevation with parts broken away and parts in section,

and FIGURE 4 is a horizontal section on line 4—4 of FIGURE 3.

FIGURE 5 is a top perspective of the invention in use.

A platform formed by a disk **1**, preferably made of wood, is clamped between a pair of metal plates **2** and **3** by a plurality of bolts **4** having nuts **5**. Such disk is supported by a helical compression spring **6** having its axis upright and of a length a plurality of times as great as its diameter. Also the platform is of substantially equal width in directions perpendicular to each other and each such width is several times as great as the diameter of the spring. The upper end of helical compression spring **6** is secured by a clamp **7** welded to plate **3**, and its lower end is similarly secured to a base plate **8**. Such base plate is secured to a concrete base block **9** in a conventional manner, such as by bolts **10** embedded in the concrete block extending upward through apertures in the base plate and having nuts **11**.

Upper and lower convolutions of the spring **6** may be stiffened by upper and lower mounting bosses or cores in the form of hollow cylinders having outside diameters slightly smaller than the inside diameter of the spring. The upper end of upper cylinder boss **12** is welded to plate **3** and such boss extends downward into the upper end of the spring. The lower end of lower cylinder boss **13** is welded to plate **8** and such boss extends upward into the lower end of the spring. Additional clamps **7'** are provided to secure the upper and lower ends of spring **6** to the mounting bosses so that the spring has at least one free turn between each boss end and the nearest clamp, as shown in FIGURES 2 and 3. The adjacent ends of the mounting cores are spaced apart to permit tilting of the disk as shown in broken lines in FIGURE 2.

A plurality of slots **14** are provided in disk **1** to form handholds, some preferably being located near the center of the disk and some preferably being located near its periphery. The platform **1** could be made in any desired shape provided that the spring **6** is mounted so that its axis coincides with the centroidal axis of the platform. However, a circular disk as shown in the drawings is preferred, to eliminate any corners or projections with which a child might collide. It is also preferred that the circumference of the disk and the edges of the slots **14** be rounded to eliminate sharp edges and slivers.

As seen best in FIGURE 2, the platform-supporting spring can bend in any direction to enable the platform to tilt universally in response to an unbalanced load carried on it. Such unbalanced load may be caused by a single child moving around or shifting his weight while being supported on the disk, or by two or more children clinging to the disk at unbalanced locations.

When the platform is unevenly or differently loaded, the unclamped convolutions of the spring **6** encircling the adjacent end portions of the upper and lower mounting cores **12** and **13** can slide therealong. The unrestrained portion of the spring between the adjacent ends of such mounting cores can bend by the sides of the spring convolutions adjacent to the portion of the disk carrying the heaviest load being pressed closer together and the diametrically opposite sides of the spring convolutions being spread apart, as indicated by the broken lines in FIGURE 2. The stiffness of the spring will retard the speed and amount of tilting of the platform produced by a given load. The extent of spring deflection or angle of tilt will be determined by the load on the platform, the degree of load eccentricity, the stiffness of the spring, the diameter of the spring, the pitch of the spring and the length of the unrestrained spring portion between the adjacent ends of the mounting cores **12** and **13**.

The spring **6** should be sufficiently rigid to support the disk and several children on it without overloading the spring, but such spring should be sufficiently yieldable to

permit the disk to tilt and teeter in response to the movements of only a single child on the disk and should be sufficiently resilient to return to an upright position, and thereby dispose the disk horizontal, when the load on the platform is removed. The spring should, however, be sufficiently limber as to be restored to its upright position reasonably gradually, so that, if the load is removed from the platform **1** abruptly, the lower side of the disk in tilted position will not snap upward and hit a child as he jumps from the disk onto the ground.

The disk is mounted relatively close to the ground so that even small children can climb onto the disk. The disk is low enough so that a child would be unlikely to wander under the disk edge, even when it is in tilted position. Furthermore, the stiffness of the spring should be sufficiently great, the length of the unrestrained spring portion between the mounting cores **12** and **13** should be sufficiently small and the platform should be sufficiently narrow as to prevent its edge from engaging the ground when the platform is tilted, so that a child on the platform could not be bounced or thrown from the platform involuntarily and a child beneath an edge of the platform could not be pinned to the ground by such edge being tilted downward. By making the platform circular the clearance between the platform edge and the ground will be the same when the platform is tilted to a given degree irrespective of the direction in which it is tilted.

We claim:

1. A playground toy comprising a helical compression spring having its axis upright and of a length a plurality of times as great as its diameter, a platform disposed normally in substantially horizontal position, of substantially equal width in directions perpendicular to each other, each such width being several times as great as the diameter of said spring, an upper spring-mounting boss projecting downward from the central portion of said platform into the upper portion of said spring, a base, and a lower spring-mounting boss projecting upward from said base into the lower portion of said spring, the adjacent ends of said spring-mounting bosses being spaced apart a distance at least as great as a full turn of said spring, said spring including a plurality of turns extending over said upper spring-mounting boss and a plurality of turns extending over said lower spring-mounting boss and having at least two free turns encircling the adjacent portions of said spring-mounting bosses for movement lengthwise of said bosses in response to changes in load on said platform, said platform being tiltable by flexure of the portion of said spring between said upper and lower spring-mounting bosses in response to loading of the platform eccentrically of the spring axis.

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