April 9, 1963 D. K. BROWN 3,084,935

CHILDREN'S RIDE DEVICE

Filed Feb. 23, 1960

FIG. 1.

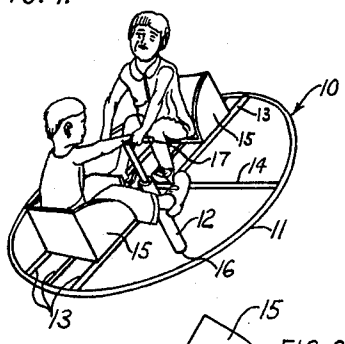


FIG. 2.

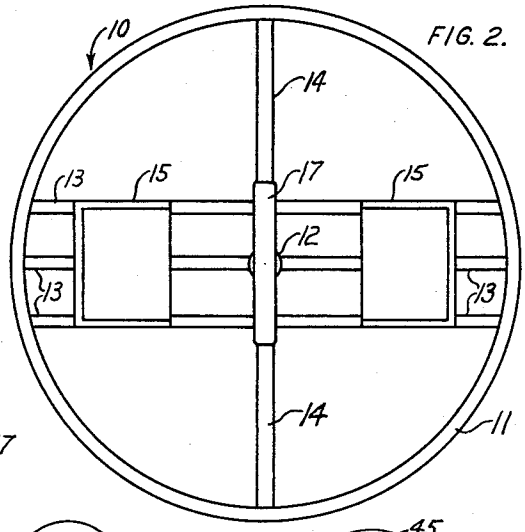


FIG. 3.

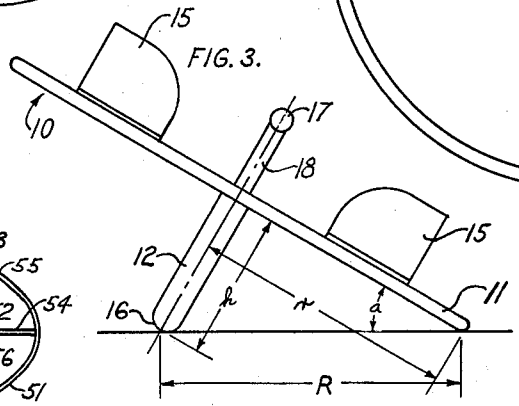


FIG. 6.

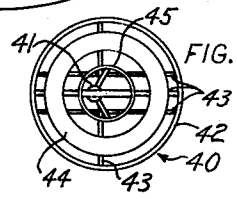


FIG. 7.

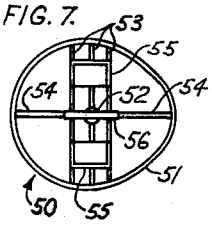


FIG. 4.

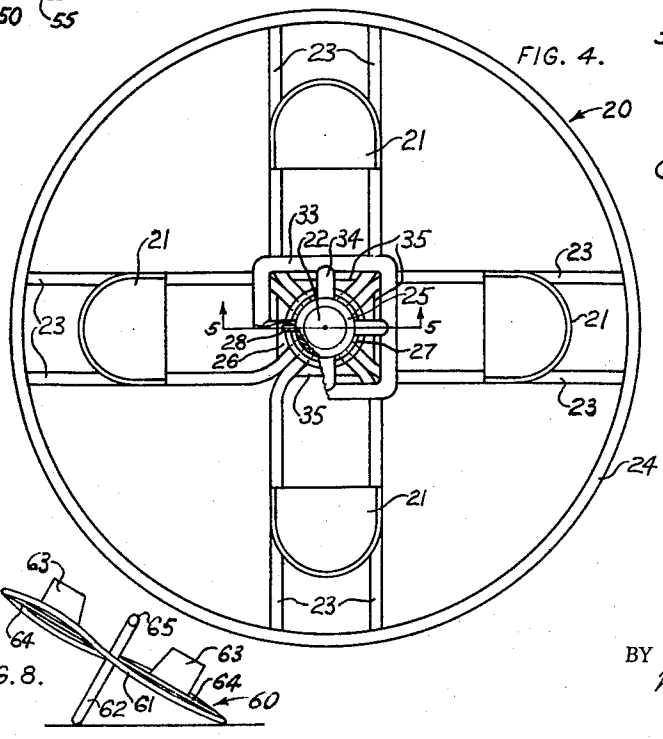


FIG. 5.

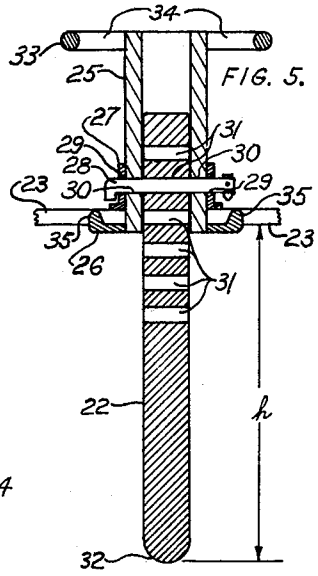


FIG. 8.

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CHILDREN'S RIDE DEVICE

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This invention relates to ride devices for children, and relates particularly to rider impelled and operated ride devices.

Many such ride devices operated by timed and coordinated rider impulse such as swings, teeter-totters and merry-go-rounds have been developed in the past. The present invention adds to such array of known rides, a new ride device designed to appeal to children and to further develop children's body balance, rhythm, coordination and sense of team-work as well as provide exercise.

A major object of the invention is to provide such a ride device that can be economically manufactured on a mass production basis, and that will hold great interest and generally sustained appeal for children.

Features cooperating in the accomplishment of the above object are the provision of a rim and a center support post joined by framework upon which seats are mounted. These are arranged to give a ride device adapted for two point support thereof on the ground through the center support post and a point of the rim. The two point support arrangement enables riders to easily set the device in motion in either direction of rotation with the point of rim contact with the ground advancing in one direction or the other as desired in response to appropriate body movement. Riders need not touch the ground to motivate the device and by appropriate body movements may bring rotative movement to a stop and reverse direction. With the center support post acting as a pivot and the point of rim contact advancing in a circular path on the ground, the device gives an up and down motion as well as a side tilting action to the riders, and, in addition simultaneously rotates the seats and riders in the reverse direction from rim point of contact advance.

A specific embodiment representing what is presently regarded as the best mode of carrying out the invention is illustrated in the accompanying drawing.

In the drawing:

FIG. 1 represents a perspective view of a two seat version of the ride device being enjoyed by two children;

FIG. 2, a top plan view of the ride device of FIG. 1;

FIG. 3, a side elevation of the ride device of FIG. 2;

FIG. 4, a top plan view of a four seat embodiment of the ride device;

FIG. 5, a fragmentary vertical section taken on line 5—5 of FIG. 4;

FIG. 6, a top plan view of a ride device with the support post and rim in eccentric relation;

FIG. 7, a top plan view of a ride device with a non-circular rim; and

FIG. 8, a side elevation of a ride device with a rim following a sinuous path.

Referring to the drawing:

The ride device **10** of FIGS. 1, 2 and 3 has a ground engaging rim **11** which is connected to a center support post **12** by framework including members **13** and cross members **14**. Framework members **13** also advantageously mount two seats **15** in opposed facing relation with each located between the center post **12** and the respective portion of rim **11**. Framework cross members **14** are also particularly useful as foot rests as may be seen in FIG. 1.

Rim **11** has all portions thereof lying substantially in a common plane normal to center post **12** which projects therefrom to a rounded end **16**. Center post **12** extends

from the plane of rim **11** so that device **10** is in two point supporting contact on the ground, one point being rounded end **16** and the other a point of rim **11**. Center post **12** supports rim **11** in such an attitude that the point of contact thereof with the ground is reasonably well defined. In addition the two point supporting contact of device **10** on the ground enables children riding thereon to easily set the device in motion in either direction of rotation as desired. When the device **10** is in motion the point of rim contact with the ground is advanced in one direction or the other by appropriate body movement. Riders need not touch the ground to motivate the device **10** and may bring rotative movement to a stop and reverse direction. Riders could grasp the sides of their chairs **15** for additional support or hold handle **17** which is mounted on center post extension **18**.

Rounded end **16** of center post **12** acts substantially as a pivot about which the rim **11** point of contact with the ground advances in a circular path. The advance of rim point of contact with the ground is a rim **11** rocking or rolling action with constantly changing elemental portions of the rim **11** establishing contact with the ground as the point of rim **11** contact is moving. When rim **11** is moving in this manner device **10** gives riders an up and down motion along with a rotating tilt action and simultaneously rotates the seats **15** and riders in the reverse direction from the advance of rim point of contact.

With rounded end **16** of center post **12** considered a pivot point at distance "h" from the plane of rim **11** and "r" the radius of rim **11** (see FIG. 3) the radius "R" of the circular path of rim contact with the ground equals the square root of the quantity h^2+r^2. It follows that the rate of rider and seat **15** rotation in reverse of the rotational advance of rim point of contact is determined by the amount the circumference of rim **11** is shorter than the circumference of the circular path of rim contact with the ground and in addition what portion this difference in circumferences is of rim circumference. The circumference of rim **11** is $2\pi r$ and the circumference of the circular path is $2\pi R$ or $2\pi\sqrt{h^2+r^2}$ and the difference in circumference equals $2\pi R-2\pi r$. For illustration, if this difference should equal ⅓ of the rim circumference then for every three turns of rim point of contact advance the seats **15** and riders would complete one rotation in reverse.

Different center post lengths "h" may be used to provide different ride effects. A relatively short length "h" such as to give a rim to ground angle "a" of approximately 25 to 30 degrees provides a relatively mild ride particularly suitable for young children 2 to 5 years of age. On the other hand lengths "h" such as to give a rim to ground angle "a" of approximately 40 to 45 degrees provides a particularly exhilarating ride.

In the embodiment of FIGS. 4 and 5 ride device **20** is an enlarged four seat **21** version employing an adjustable center support post **22**. Framework members **23** interconnect ground engaging rim **24** and the center post **22** as well as mounting the seats **21**.

Center post **22** is mounted in a tube **25** connected to framework members **23** by an interlocking plate **26**, which is fastened to tube **25** as by welding, and by locking ring **27**. Adjusting pin **28** projects through openings **30** of tube **25** to hold the ring **27** in place. In addition whenever adjusting pin **28** is being inserted it is placed through one of the openings **31** to hold center post **22** in place at a desired length "h" from a plane of rim **24** and members **23** to the rounded end **32**. Such an adjustable length center post could also be adapted for use in the embodiment of FIGS. 1–3 if desired. Rectangular handle **33** is mounted on the top of tube **25**

by arms 34 for the convenience of riders occupying seats 21. Plate 26 has four upwardly extending sides 35 which not only serve as foot rests for riders but also to hold respective inner portions of members 23 held down by locking ring 27 between adjacent ends of sides 35.

It should be realized there is no intention that the invention be limited to just two and four seat versions as one child could enjoy a small version of the device if properly counterbalanced as well as riders in various numbers with various versions. A three seat version could be easily provided with the seats symmetrically positioned thereon. In other versions a continuous annular seat such as shown in the embodiment of FIG. 6 could be employed.

It is also intended to include within the scope of my invention variations in ride devices wherein rims are displaced from a concentric relation with the support posts to an eccentric relationship therewith, and wherein other rims vary from a circle and/or vary in other directions so that various points about the rim will not lie in a common plane. These ride device variations may be employed singly or in various combinations when it is desired to impose additional variations in ride over ride effects hereinbefore described.

The ride device 40 of FIG. 6 has a support post 41 eccentrically located relative to rim 42 which is joined thereto by framework members 43. It should be noted that an annular ring seat 44 is mounted on framework members 43 and that such a seat could be readily adapted for use on the various other ride devices shown. Circular handle 45 is mounted to the top of support post 41 for riders' convenience.

In the ride device 50 of FIG. 7 rim 51, which is irregularly shaped (possibly egg-shaped), is joined to support post 52 by framework members 53 and cross members 54. Seats 55 are mounted on framework members 53 and cross members 54 provide foot rests for riders. In addition a handle bar 56 is mounted on the top of support post 52.

In the interesting embodiment of FIG. 8 ride device 60 has a rim 61 which deviates from a plane normal to support post 62 in a sinuous path. Seats 63 are mounted on framework members 64 which join rim 61 to center post 62. A handle 65 is also provided at the top of support post 62 in this embodiment.

In the ride device embodiments of FIGS. 6–8 and embodiments utilizing combinations thereof it should be realized that these variations are not to so vary from the embodiments of FIGS. 1 and 4 as to not employ two point supporting contact as described therefore.

Whereas there are here illustrated and described certain preferred constructions which I presently regard as the best mode of carrying out my invention, it should be understood that various changes may be made without departing from the disclosed inventive subject matter particularly pointed out and distinctly claimed hereinbelow.

I claim:

1. A rider propelled device comprising: a continuous rim; a support post having a lower end axially displaced from the rim and resting directly in contact with a supporting surface, a floor for example; framework interconnecting the rim and the support post; a plurality of separate seats symmetrically disposed about the support post; said seats being mounted on said framework outboard of said support post and inboard of said continuous rim; said device being constructed for resting substantially in two point contact with the supporting surface, one point being at the lower end of the support post and the other point being a point of the rim; and the continuous rim presenting an endless continuous line of points positioned for repeated momentary engagement with the supporting surface as the device is in ride motion.

2. The ride device of claim 1, wherein the rim is circular and in eccentric relation with the support post.

3. The ride device of claim 1, wherein the rim is irregularly shaped.

4. The ride device of claim 1, wherein the rim is common to a plane normal to the support post.

5. The ride device of claim 1, wherein the rim deviates from a plane normal to the support post.

6. The ride device of claim 1, wherein the rim deviates from a plane normal to the support post in a sinuous path.

7. A rider propelled device comprising: a substantially continuous rim; a support post having a lower end axially displaced from the rim and resting directly in contact with a supporting surface; framework interconnecting the rim and the support post; a plurality of separate seats symmetrically disposed about the support post; said seats being in inwardly directed support post facing relation; laterally extended foot rest means inboard from each seat and adjacent said support post; hand hold means inboard from the separate seats and axially displaced above said support post; said device being constructed for resting substantially in two point contact with the supporting surface, one point being at the lower end of the support post and the other point being a point of the rim; and with the point of the rim being a constantly changing elemental portion of the rim in contact with the supporting surface when the device is in motion; said rim being positioned in such relation to said support post as to roll along a substantially closed path on the supporting surface; and the circumferential length of the rim being shorter than the substantially closed path on the supporting surface whereby, the seats and the riders are rotated bodily in a direction opposite to the direction of rim point of contact advance along the substantially closed path simultaneously with an up and down motion and a constantly shifting side tilting action as the device is being used.

8. A portable ride device constructed for movement as a unitary structure when used as a ride on any conveniently available supporting surface as a floor, lawn, or pavement, comprising: a rim; a support post having a lower end axially displaced from the rim for engaging said supporting surface; means for connecting the rim and the center post together in a unified structure; means for seating multiple riders; said rim being arranged for engaging said supporting surface, wherein said device is constructed for obtaining substantially two point support from said supporting surface, one point being at the lower end of the support post and the other being substantially a point on the rim; said support post including slidably engaged upper and lower sections and means for securing the sections in vertically adjusted relation to each other, said upper section being fixed to said means for connecting the rim and the center post together, and with said lower section including the lower end of the support post.

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