June 28, 1932. C. E. HOPPES ET AL 1,864,733

MERRY-GO-ROUND

Filed July 27, 1931 2 Sheets-Sheet 1

FIG 1

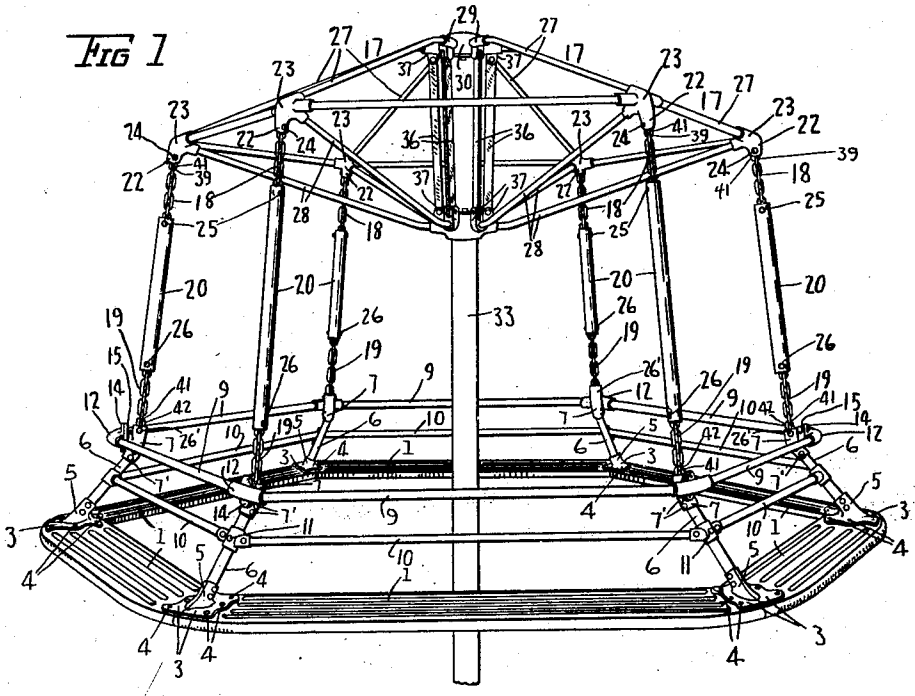
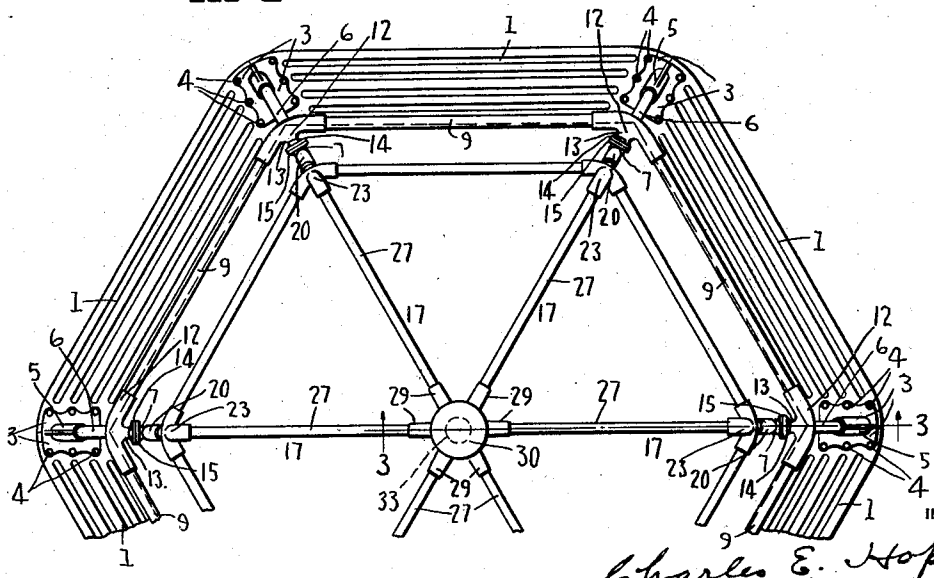


FIG 2



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Filed July 27, 1931 2 Sheets-Sheet 2

FIG 3

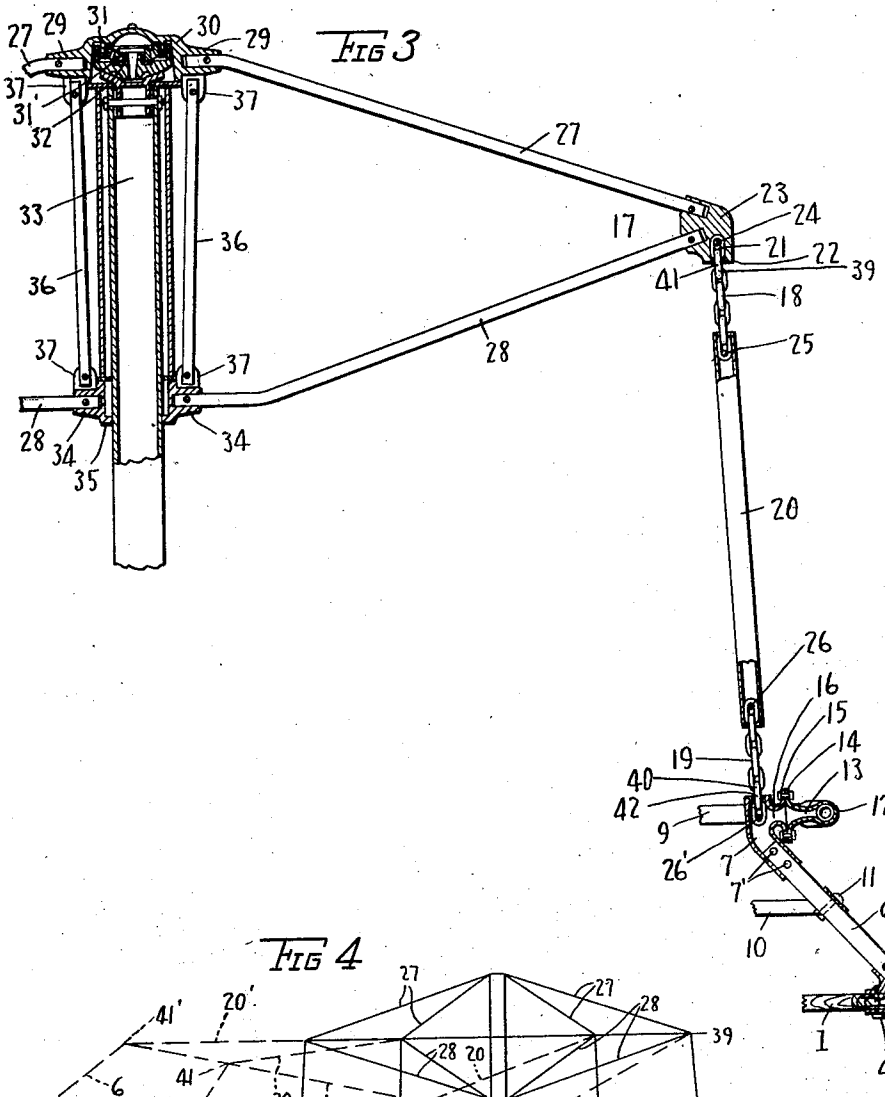
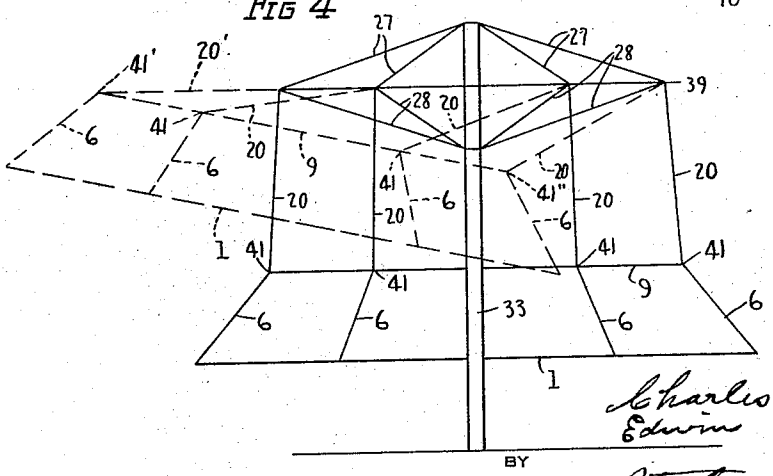


FIG 4



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UNITED STATES PATENT OFFICE

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MERRY-GO-ROUND

Application filed July 27, 1931. Serial No. 553,241.

This invention relates to improvements in merry-go-rounds of the rider-propelled type used on playgrounds by children.

In general, the device consists of a circularly-extending platform which is suspended from a central post in such a way that it may not only revolve about the axis of the post, but have oscillatory movements to and from the post; the device being equipped with hand rails whereby children may stand or sit on the platform and maintain their equilibrium by grasping the hand rails.

One of the objects of the invention is to provide an arrangement of this kind whereby contact of the platform or other parts with the central post during oscillatory movements is prevented, thus eliminating danger to children using the outfit.

Another object of the invention is to so arrange the parts that children may stand on the platform and maintain their equilibrium by grasping the hand rails in a natural manner or by grasping the suspension members and not being compelled to lean outwardly at a dangerous angle during that portion of the swinging or oscillatory movement at which the platform approaches the axis about which it swings.

A further object is to provide an arrangement for suspending the platform whereby the platform will be caused to assume an angle to the horizontal during oscillatory movements thereof so as to conform itself to the natural lean of a child on the platform to thereby better enable the child to maintain its equilibrium.

A further object of the invention is to provide for so connecting the suspension members with the platform as to eliminate danger of pinching the hands or crushing the bodies of children using the device.

Other objects of the invention will appear from the accompanying description and claims.

In the accompanying drawings:

Fig. 1 is an elevation in perspective of the improved device.

Fig. 2 is a fragmentary top plan view of the same.

Fig. 3 is a fragmentary enlarged vertical section on the line 3—3 of Fig. 2.

Fig. 4 is an elevation in which is shown in diagrammatical form one view of the improved suspension means.

Referring to the drawings, a footboard is provided composed of a plurality of wooden members 1 arranged in the form of a polygon and secured to one another by plates 2 and stanchion base members 3, there being bolts 4 passing through the members 1, 2 and 3, the plates overlapping the joints of the footboards as shown in Fig. 1. The stanchion base members 3 are each further provided with a hollow boss 5 into which a short stanchion piece 6 is inserted. On the upper end of each stanchion piece 6 is fitted a hollow casting member 7 which is bolted to the stanchion piece 6 by bolts 7'.

These stanchions are braced one to another by railing members 9 and 10 which also serve as hand rails. Each member 10 is secured to a stanchion piece 6 by a casting which partly encircles the stanching piece and is secured thereto by bolts 11, while each rail 9 is inserted in the open ends of a member 12 which is in turn secured to the mating member 7, there being a neck 13 terminating in a flange 14 cooperating with a similar flange 15, which is integrally connected to the member 7 by a neck portion 16.

Referring to Fig. 3, one of the advantages of this construction is seen in that the rail 9 occupies a position comparatively remote from the upper ends of the stanchion but does not overlie to any great degree any portion of the footboards 1 thereby permitting the children to stand erectly on the footboard.

The structure thus far described is supported by the outer ends of radial arms indicated in general at 17, there being employed preferably as many arms 17 as there are sides of the polygonally-shaped footboard. The means of suspension from the arms 17 is by the use of flexibly connected suspension members each comprising short lengths of chains 18 and 19 and a tubular member 20. The upper end of the chain 18 is fitted into a cored aperture 21 in a downwardly extending boss 22 of an arm end piece 23 and secured therein

by means of a bolt 24 which passes transversely through the boss 22 and through one of the upper links of the chain 18. The lower end of the chain 18 is inserted in a bore of the mating tubular member 20 and here a bolt 25 passes transversely through the tube 20 and through one of the lower links of the chain.

The upper and lower ends of the chain 19 are supported in a similar manner, 26 being a bolt passing through the lower end of tube 20 and through an upper link. Another bolt 26′ passes through the lower link of chain 19.

The arms 17 are each composed of diagonally arranged members 27 and 28, the members 27 each being fitted into radially disposed bosses 29 integrally attached to a hub 30. In the hub 30 is fitted the outer race 31 of a roller bearing while inner race 31′ of this bearing is fitted on the hub of a member 32 fixed on the upper end of the center post 33. The inner ends of the lower arms 28 are each inserted in the bosses 34 of a hub 35 which is journaled on the center post 33 at a sufficient distance below the upper hub 30 to provide for an ample degree of strength. Use is made of a plurality of tie bars 36 which are bolted to ears 37 on both the hubs 30 and 35.

This latter described structure provides a spider-like construction terminating in the arm end pieces 23 to which the suspension members composed of the chains 18 and 19 and tubular members 20 are connected. The effective length of the suspension members is somewhat less than the length of the arms 17, which in connection with the fact that the suspension members hang in planes slightly inclined to the vertical which are within the vertical planes of the inner edges of the platform members, will effectively prevent the platform or other parts connected therewith from hitting the central post during oscillatory movements, as shown in Fig. 4, in which the full lines represent the device in a state of rest while the broken lines indicate the movable part of the device at one end of the swing it is capable of making. During a swing of the amplitude shown, which is greater than will be actually encountered in use, no part of the swinging elements of the device will make contact with the center post or any part of the radial arm structure, since such a swing is limited by the length of the suspension members. Referring to the suspension member shown in detail in Fig. 3, the points indicated by the characters 39 and 40 are to be considered as the hinge points, as each link 41 and 42 is prevented from movement in its respective position. Therefore the portion of the suspension arm between the points 39 and 40 is the true swinging portion and when a swing of the extraordinary amplitude as shown is made, a limit is reached when any one suspension member is caused to assume a horizontal position such as the suspension member indicated at 20′, at the left of Fig. 4. Any further swing will cause the point 41′, corresponding to any one of the lower hinge points 41 of a suspension member to move toward the center post, and as the foot board is in the nature of an annular ring surrounding the center post, such further swing will cause the side of the foot board nearest the post such as at the point 41″ to recede from the post.

By having the upper hand rails on the outside of and removed from the points of connection of the suspension members with the stanchion, danger of pinching the hands of a child at the points where the lower chains enter the extension sockets is remote.

By having the suspension members arranged at an angle to the vertical when the apparatus is at rest, the platform when swinging to and from the central post, will be caused to assume an angle to a horizontal plane to thereby better enable a child to maintain its equilibrium thereon for the reason that the platform will conform more nearly to the natural lean of the child during such swinging movement.

Having thus described our invention, we claim:

1. In an apparatus of the character described, a central vertical support, revolubly mounted radially-extending arms on the upper end thereof, a circularly-extending platform, a plurality of freely-movable suspension members for supporting said platform from said arms, the lengths of said suspension members being less than the lengths of the arms, said platform being located in vertical planes further removed from said central support than the planes of said suspension members.

2. In an apparatus of the character described, a central vertical support, revolubly mounted radially-extending arms on the upper end thereof, a circularly-extending platform, a plurality of inclined stanchion members connected with said platform, a plurality of freely-movable suspension members connecting the upper ends of said stanchion members with the outer ends of said radial arms, the length of said suspension members being less than the length of the arms.

3. In an apparatus of the character described, a central vertical support, revolubly mounted radially-extending arms on the upper end thereof, a circularly-extending platform, a plurality of inclined stanchion members connected with said platform, a plurality of freely-movable suspension members connecting the upper ends of said stanchion members with the outer ends of said radial arms, the length of said suspension members being less than the length of the arms, and hand rail members connecting said stanchion members.

4. In an apparatus of the character described, a central vertical support, revolubly mounted radially-extending arms on the upper end thereof, a circularly-extending platform, a plurality of inwardly and upwardly inclined stanchion members connected with said platform, a plurality of freely-movable suspension members connecting the upper ends of said stanchion members with the outer ends of said radial arms, the length of said suspension members being less than the length of the arms, each suspension member consisting of a rigid intermediate member and short lengths of chain at each end thereof.

5. In an apparatus of the character described, a central vertical support, revolubly mounted radially-extending arms on the upper end thereof, a circularly-extending platform, a plurality of freely-movable suspension members for supporting said platform from said arms, the points of connection of said suspension members for said platform being further removed from the central support than the points of connection of said suspension members to said radial arms to impart to said suspension members an outward inclination in a downward direction when the apparatus is at rest whereby during swinging movement of the platform toward said central support the platform will be given an inclination to the horizontal.

6. In an apparatus of the character described, a central vertical support, revolubly mounted radially-extending arms on the upper end thereof, a circularly-extending platform, a plurality of freely-movable suspension members for supporting said platform from said arms, the lengths of said suspension members being less than the lengths of the arms, said platform being located in vertical planes further removed from said central support than the vertical planes of said suspension members, the points of connection of said suspension members for said platform being further removed from the central support than the points of connection of said suspension members to said radial arms to impart to said suspension members an outward inclination in a downward direction when the apparatus is at rest whereby during swinging movement of the platform toward said central support the platform will be given an inclination to the horizontal.

7. In an apparatus of the character described, a central vertical support, revolubly mounted radially-extending arms on the upper end thereof, a circularly-extending platform, rigid stanchion members connected with said platform, freely-movable suspension members connecting the upper ends of said stanchion members with the outer ends of said radial arms, and hand rail members connected with the upper ends of said stanchion members at points outwardly removed from the points of connection of said suspension members therewith.

8. In an apparatus of the character described, a central vertical support, revolubly mounted radially extending arms on the upper end thereof, a circularly-extending platform, a plurality of freely movable suspension members for supporting said platform from said arms, said platform being located in a vertical plane further removed from said central support than the planes of said suspension members.

9. In an apparatus of the character described, a central vertical support, revolubly mounted radially-extending arms on the upper end thereof, a circularly-extending platform, inwardly extending stanchion members connected with said plaltform, and a plurality of freely movable suspension members connecting the inner ends of said stanchion members with the outer end of said radial arms.

In testimony whereof, we have hereunto set our hands this 23rd day of July 1931.

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EDWIN F. HOPPES.