Oct. 10, 1950 R. R. PETERSON 2,525,458

COLLAPSIBLE ROUNDABOUT

Filed Nov. 26, 1947 4 Sheets-Sheet 1

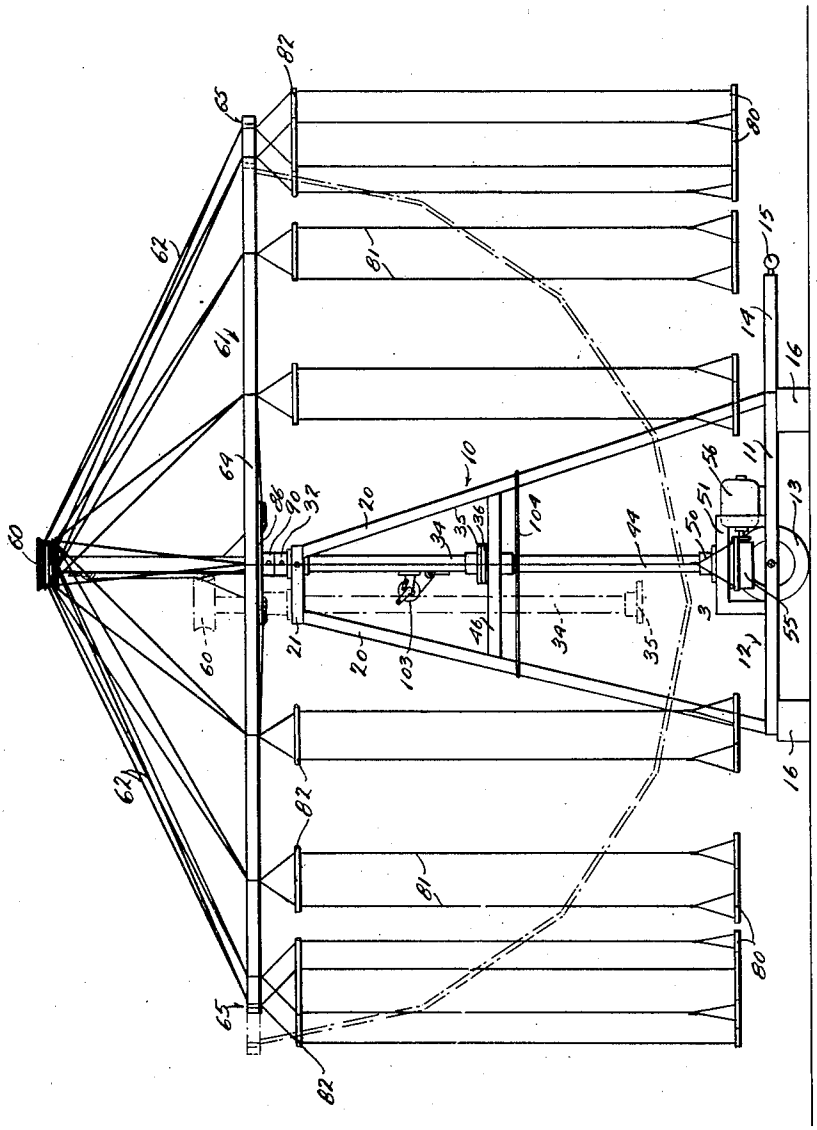

Fig. 1.

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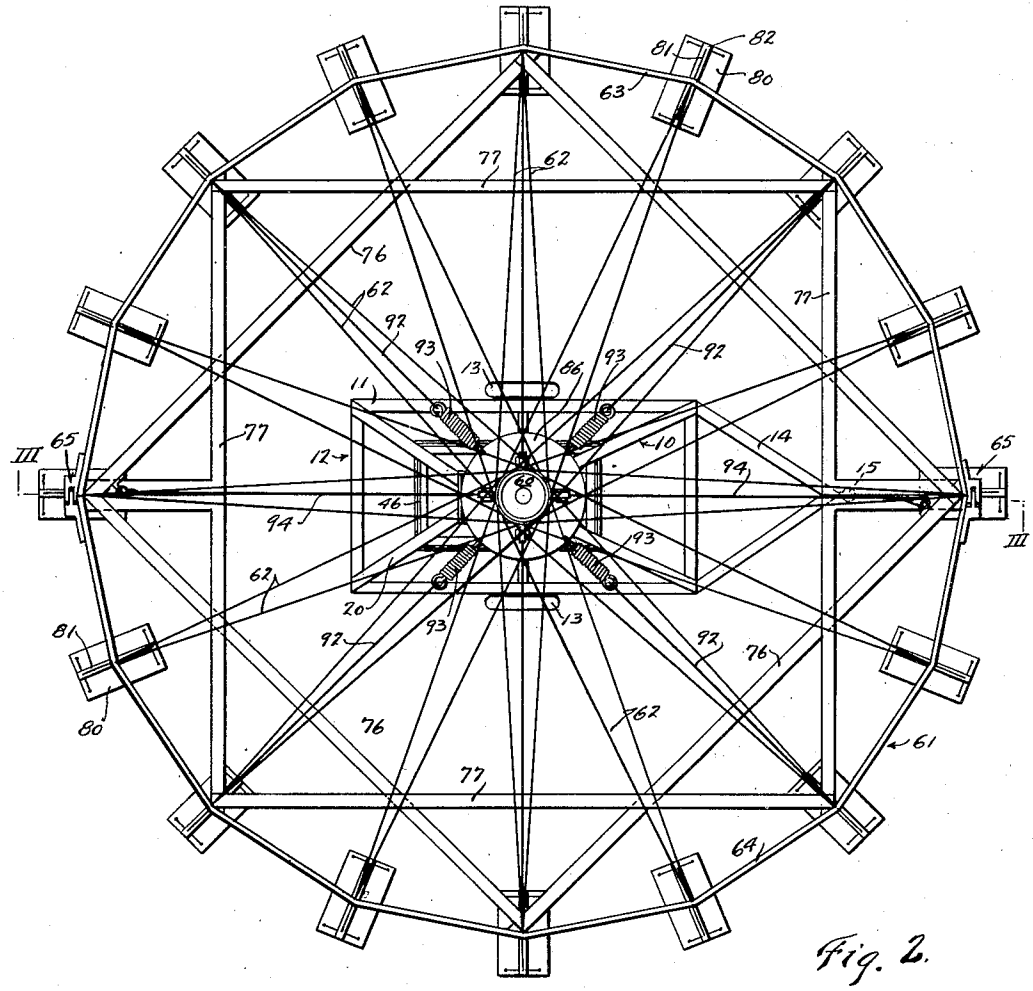

Fig. 2.

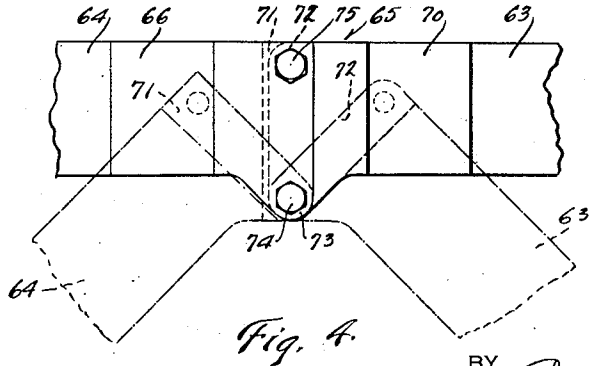

Fig. 4.

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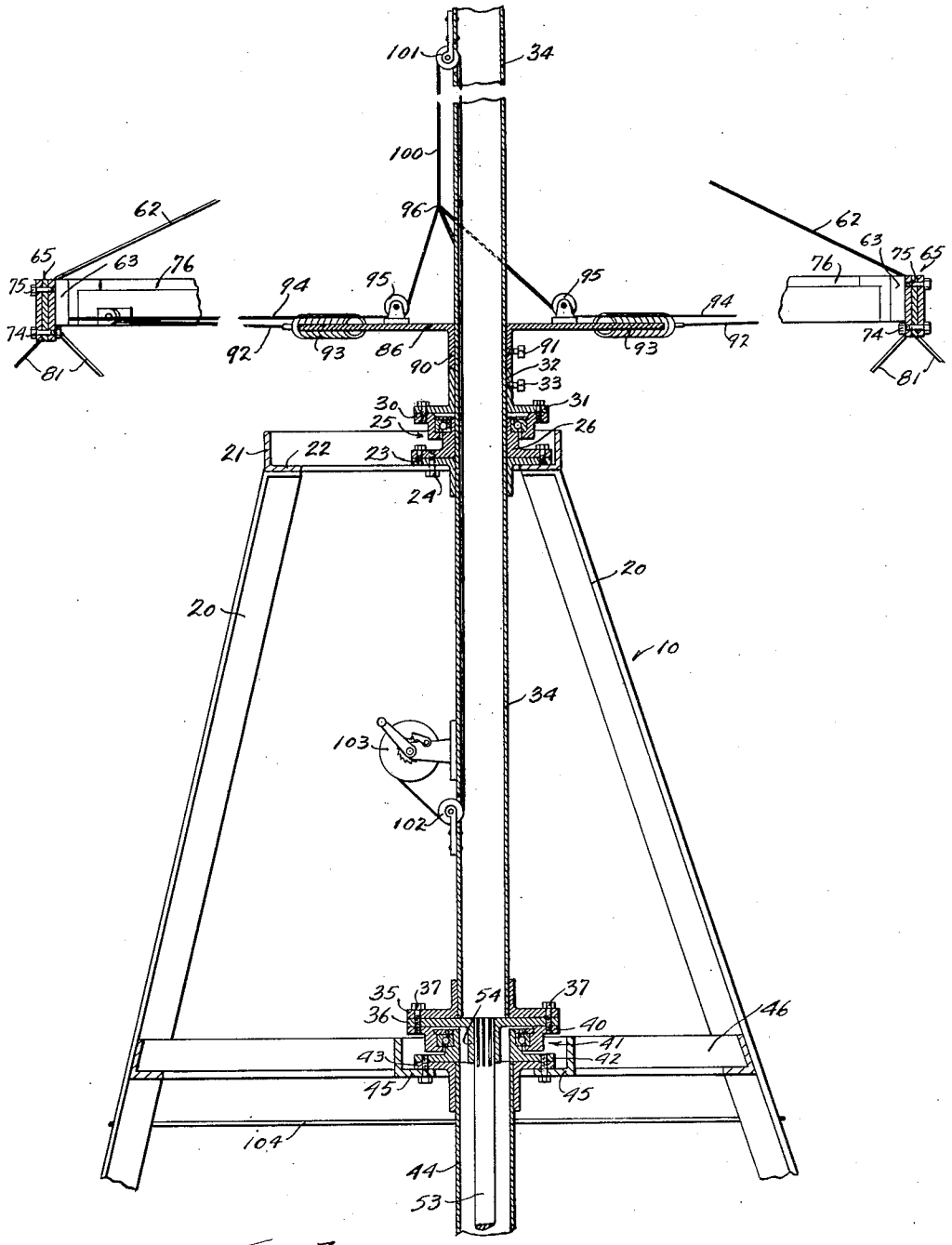

Fig. 3.

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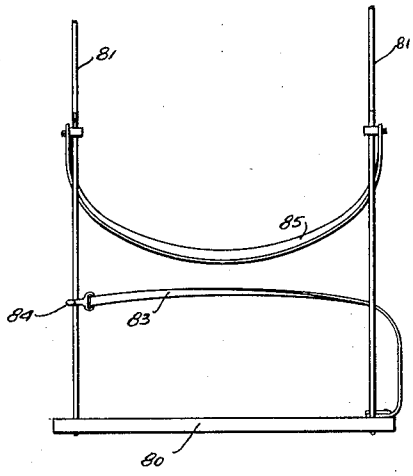

Fig. 5.

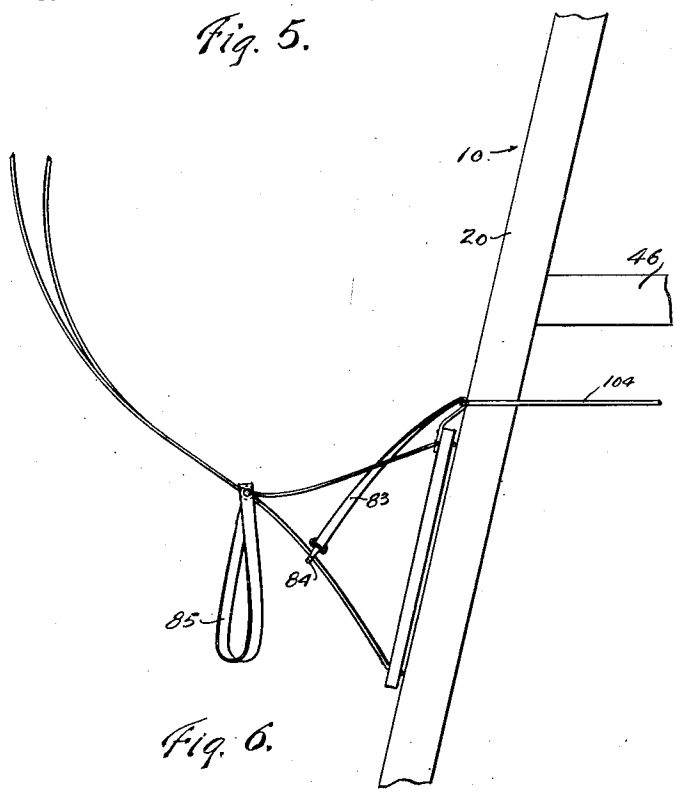

Fig. 6.

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UNITED STATES PATENT OFFICE

2,525,458

COLLAPSIBLE ROUNDABOUT

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Application November 26, 1947, Serial No. 788,161

22 Claims. (Cl. 272—29)

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My invention relates in general to amusement devices and in particular to rotary swings.

The principal object of my invention has been to provide an amusement device of this nature which may be easily collapsed for ready transportation from one place to another.

Another object is to provide a rotary swing which may be collapsed for transportation or storage without having to disassemble the various parts of the device.

A further object is to provide a device having a rotary supporting member which may be easily disconnected from the driving mechanism, and be moved laterally and axially to permit the same to be lowered, whereby the height of the device when collapsed is reduced sufficiently to permit transportation.

A further object has been to provide a collapsible supporting ring having hingedly connected parts foldable to positions adjacent the supporting standard of the device.

Moreover, it has been an object to provide means for temporarily attaching the seats to the standard while transporting the device without having to disconnect any of the cables.

Furthermore, my device is provided with means for holding the seat-supporting ring of the device temporarily in fixed position while passengers are being seated, means being also provided to maintain the ring in its normal operating position and to absorb abnormal shocks placed upon any part thereof.

The above objects and advantages have been accomplished by the device shown in the accompanying drawings, of which:

Fig. 1 is a side elevation of the complete device with portions thereof shown in collapsed position.

Fig. 2 is a plan view thereof.

Fig. 3 is an enlarged fragmentary side elevation taken on line III—III of Fig. 2.

Fig. 4 is an enlarged fragmentary view of one of the hinged joints between the parts of the ring.

Fig. 5 is an enlarged view of one of the seats of the device; and,

Fig. 6 is a fragmentary enlarged view showing one of the seats temporarily attached to the standard in position for transportation.

My device comprises a standard 10 mounted upon the chassis 11 of a trailer 12. Since my device is designed to be conveniently transported from place to place, the trailer 12 is provided with suitable wheels 13 and drawbar 14 at the forward end of which is a suitable connector 15

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for attachment to a suitable vehicle for towing the device. When the device is erected and is in position to be used, suitable blocks 16 are placed under the chassis so as to lift the wheels 13 slightly off the supporting surface and thereby steadying the device while in use.

The standard 10 is provided with upwardly extending corner members 20 which extend from the chassis 11 upwardly in converging manner, having their upper ends secured to a top member 21. The corner members and the top members are preferably made of structural steel of angle iron cross section, and the top member is so disposed that the flange 22 thereof extends inwardly, thereby forming a support for the mounting flange 23. This mounting flange is secured to the flange 22 by means of a bolt 24 during the time that the device is in use, and is removed therefrom when the device is to be collapsed, as will be described hereinafter. The mounting flange 23 supports the upper anti-friction bearing 25 of my device, the stationary member 26 thereof being bolted to the mounting flange 23. The rotatable member 30 of the bearing is secured to a supporting flange 31. This flange has a hub portion 32 having a set screw 33. A rotatable tubular member 34 is supported by the upper bearing 25 and passes through the bearing, the mounting flange 23 and the supporting flange 31, and it is secured against relative rotation with the flange 31 by means of a set screw 33.

The rotatable tubular member 34 extends downwardly and a column flange 35 is permanently secured to the lower end thereof. This flange is mounted upon a drive flange 36 which is supported by the rotary member 40 of the lower anti-friction bearing 41. The stationary member 42 of this bearing is supported by a supporting flange 43 permanently secured to the upper end of a tubular supporting column 44. The supporting flange is mounted upon oppositely arranged cross members 45 carried by braces 46 attached to the corner members 20 of the standard. The lower end of the tubular support is provided with a lower supporting collar 50 which rests upon a chassis support 51. Bolts 37 serve to clamp together the rotary tubular member flange 35, drive flange 36 and the flange of the rotary bearing member 40 as one unit.

A drive shaft 53 extends up through the tubular supporting column 44, having its upper end provided with splines and connected thereby to the hub 54 of the drive flange 36. The lower end of the drive shaft is suitably connected to

a speed reducing device 55, mounted preferably upon the chassis support 51 and driven through suitable connecting means by the motor 56. This motor may be an electric motor, or the source of power for the device may be derived from a gasoline engine or the like.

The upper end of the rotary tubular member 34 extends upwardly a considerable distance above the top of the standard where it is provided with a guy wire drum 60 which is permanently fixed thereto. A seat support ring 61 is mounted near the top of the standard and is held in position by means of a plurality of pairs of guy wires 62 secured to the guy wire drum and to the ring. The ring of my device is preferably of polygonal shape. The guy wires of each pair extend from the common point of attachment to the ring to opposite sides of the drum and are preferably wrapped about the drum so that the pull produced upon them when the device is in operation will be from the periphery of the drum. The ring is preferably made in two sections 63 and 64 permanently secured together by hinge members 65 arranged at opposite sides of the ring and preferably upon a diametric axis. Each of these hinges preferably comprises two parts 66 and 70, one formed with a groove 71 and the opposite member with a tongue 72. The members are provided with a downwardly extending tab 73 which extends preferably below the lower edge of the ring through which a hinge bolt 74 is extended, whereby the point of hinging will be below the lower edge of the parts of the ring. A bolt 75 is passed through the members of the hinge near the upper ends and serves to keep the hinge in closed position. As shown in Fig. 4 one of these hinges is illustrated in closed position in full lines and in its partly opened position in dot and dash lines.

The ring 61 is preferably strengthened by a plurality of braces 76 and 77 extending across the interior of the ring and arranged in two superimposed groups of square-shaped formation, each group of braces being secured to the ring at the corners thereof. My device is provided with a plurality of seats 80 suspended from cables 81 which extend upwardly from the seat to a spacing bar 82 above which the two cables converge and are suitably attached to the ring. As shown in the drawings each pair of cables is preferably attached to the ring at points where the relatively flat sides of the perimeter converge, and each pair of guy wires are preferably also attached at these points so that the weight of the occupant of each seat is taken directly by the guy wires, the ring acting as a spacing medium between the seats. Each of these seats is preferably provided with a safety belt 83, secured at one end to the seat and extensible across the lap of the occupant and being attached at the opposite end by a suitable snap fastener 84 to the opposite supporting cable 81. A back strap 85 may also be provided for each seat, the ends of which are secured to the supporting cables 81.

Mounted above the hub 32 of the supporting flange 31, and surrounding the rotary tubular member 34 is a leveling disc 86 having a hub 90 which may be securely attached to the tubular member by means of a set screw 91 carried by it. Connecting this disc with the ring are a plurality of leveling wires 92, one extending from each corner of the square brace member formed by the braces 77 and having its inner end connected to a helical spring 93, which in turn is carried by the disc. The springs are of such strength as to keep the ring 61 in normal operating position but serve to absorb any shock given the ring by suddenly applied weight at one side thereof.

It is desirable in a device of this nature to maintain the ring in a substantially fixed position while passengers are being seated, and to this end I provide horizontal holding wires 94. These wires extend preferably from the corners of the brace member formed by graces 76 toward the disc where they pass under idler pulleys 95, extending therefrom upwardly to a point of union at 96 with a common vertically arranged holding wire 100. The common wire extends upwardly over an idler 101, located near the top of the rotary tubular member 34, through the wall of such member, down through the interior thereof to a point below the upper bearing 25 where it is passed outwardly through the wall and over an idler 102 to a holding drum 103. The holding drum as well as the idlers 101 and 102 are carried by the rotary tubular member 34, and the drum is arranged at a height convenient for the operator, whereby the holding wires may be drawn taut so as to keep the ring and the seats in a substantially fixed vertical position while the device is being loaded with passengers. After loading, the holding wires are released and the device is ready to be placed in operation.

When my device is to be used, the ring is, of course, in its extended position as shown by the full lines in the drawings. The seats are occupied by the passengers while the ring is held substantially in fixed position by the holding wires, as just above described. After the seats are occupied by the passengers, the holding wires are released as hereinbefore stated, and power is supplied to the drive shaft 53 by the motor 56. This rotary movement is transmitted directly to the rotary tubular member 34 by means of the shaft and drive flange 36, and to the seat-supporting ring by means of the drum and attached guy wires.

When the device is to be collapsed for transportation or storage, the bolts 37 holding together the flanges 35, 36, and 40 are removed. The bolt 24 securing the upper bearing to the top member is also removed, and the set screws 33 and 91 carried by the support flange and leveling disc are loosened. Then by means of a suitable tackle (not shown) secured preferably to the top member of the standard and attached to the rotary member the entire rotary assembly is elevated sufficiently to cause the column flange 35 to clear the drive flange 36 whereupon the rotary assembly is moved laterally upon the flanges 22 of the top member. After the assembly is moved laterally sufficiently to permit the flange 35 to clear the adjacent cross member 45, the entire assembly is allowed to slide downwardly through the upper bearing 25 and the hubs 32 and 90 of the supporting flange and leveling disc, respectively, until it occupies a position substantially like that shown by dot and dash lines in Fig. 1. Either before lowering the rotary assembly or thereafter, the bolts 75 of the ring hinges are removed and the parts 63 and 64 of the ring are allowed to move downwardly about the hinges as pivots, until they occupy substantially the positions shown in dot and dash lines of Fig. 1 where they will remain suspended from the hinge bolts 74.

When the device is in its collapsed position, the seats are preferably attached to a seat suspending wire 104 by having the safety belt 83 looped around the wire and the snap fastener 84

at the end thereof attached to one of the seat suspending cables **81**, as clearly shown in Fig. 6.

Obviously when the device has been transported to the place of use, it is only necessary to release the seats from their attachment to the wire **104** after which the ring may be hinged about the hinge pins **73** and fastened in its extended position by means of lock bolts **75**. The rotary assembly is then elevated by the hoisting mechanism (not shown) until the supporting flange **35** is at a position opposite the drive flange **36** whereupon the entire assembly is moved laterally until the rotary tubular member is in registration with the supporting column **44** whereupon the bolts **37** are again put in place to attach the flanges **35**, **36** and **40**. The bolt **24** is again put in place to secure the upper bearing in fixed position and the set screws **33** and **91** are again tightened upon the rotary tubular member whereupon the device is again ready to be placed in operation.

It will be obvious from the foregoing that the collapsing and erecting of my device is extremely simple and can be accomplished by one person in a short period of time. Furthermore, owing to the fact that none of the parts of the device have to be disassembled or removed except the flanges above mentioned and the bolts and set screws, nothing is likely to become lost or misplaced.

What is claimed is:

1. An amusement device comprising a standard, a ring rotatably supported by said standard, a plurality of swings suspended from said ring, said ring being formed of two parts hinged together at diametrically opposite points, means for retaining said ring parts in working position, a stationary tubular column mounted on said standard, a rotatable tubular member in substantial alignment with said stationary column, and means for mounting said rotary member to permit lateral and longitudinal movement thereof with respect to said standard.

2. An amusement device comprising a portable chassis, a standard carried by said chassis, a ring rotatably supported by said standard, a plurality of swings suspended from said ring, said ring being formed of two parts hinged together at diametrically opposite points, means for retaining said ring parts in working position, a stationary tubular column mounted on said standard, a rotatable tubular member in substantial alignment with said stationary column, and means for mounting said rotary member to permit lateral and longitudinal movement thereof with respect to said standard.

3. An amusement deice comprising a standard having a top member, an upper bearing mounted on said top member and slidable laterally thereof, means for maintaining said upper bearing in its normal position, a lower bearing carried by said standard and fixed in relation thereto, a tubular member slidably mounted in the upper bearing and detachably secured to the lower bearing, a collapsible ring supported by said tubular member, a plurality of swings suspended from said ring, and means for rotating said tubular member.

4. A collapsible amusement device comprising a standard having a top member, an upper bearing mounted on said top member and slidable laterally thereof, means for maintaining said upper bearing in its normal position, a lower bearing carried by said standard and fixed in relation thereto, a tubular member slidably mounted in the upper bearing and detachably secured to the lower bearing, a ring supported by said tubular member, a plurality of swings suspended from said ring, and means for rotating said tubular member.

5. An amusement device comprising a standard having a top member, an upper bearing mounted on said top member and slidable laterally thereof, means for maintaining said upper bearing in its normal position, a lower bearing carried by said standard and fixed in relation thereto, a tubular member slidably mounted in the upper bearing and detachably secured to the lower bearing a ring supported by said tubular member, a plurality of swings suspended from said ring, and means for rotating said tubular member, said maintaining means being designed so as to permit said tubular member to be moved laterally on said standard and longitudinally through said upper bearing and disc member in a downward direction to collapse the device.

6. An amusement device comprising a standard having a top member, an upper bearing mounted on said top member and slidable laterally thereof, maintaining means for holding said upper bearing normally in its operating position, a lower bearing carried by said standard and fixed in relation thereto, a tubular member slidably mounted in the upper bearing and detachably secured to the lower bearing, a collapsible ring supported by said tubular member, a plurality of swings suspended from said ring, means for rotating said tubular member, a leveling disc carried by said tubular member, fastening means for normally securing said disc to said tubular member, means connecting said leveling disc with said ring, said maintaining means and said fastening means being designed so as to permit said tubular member to be moved laterally on said standard and longitudinally through said upper bearing and disc in a downward direction to collapse the device.

7. An amusement device comprising a standard having a top member, an upper bearing mounted on said top member and slidable laterally thereof, means for maintaining said upper bearing in its normal position, a lower bearing carried by said standard and fixed in relation thereto, a tubular member slidably mounted in the upper bearing and detachably secured to the lower bearing, a collapsible ring supported by said tubular member, a plurality of swings suspended from said ring, a stationary tubular column in coaxial alignment with said tubular member, a drive shaft disposed within said tubular column and connected to said tubular member, and means for rotating said shaft.

8. An amusement device comprising a standard having a top member, an upper bearing mounted on said top member and slidable laterally thereof, maintaining means for holding said upper bearing normally in its operating position, a lower bearing carried by said standard and fixed in relation thereto, a tubular member slidably mounted in the upper bearing and detachably secured to the lower bearing, a collapsible ring supported by said tubular member, a plurality of swings suspended from said ring, a tubular column in coaxial alignment with said tubular member, a drive shaft disposed within said tubular column and connected to said tubular member, means for rotating said shaft, a leveling disc carried by said tubular member, fastening means for securing said disc to said tubular member, means connecting said leveling disc with

said ring, said maintaining means and said fastening means being designed so as to permit said tubular member to be moved laterally on said standard and longitudinally through said upper bearing and said disc in a downward direction to collapse the device.

9. An amusement device comprising a standard having a top member, an upper bearing mounted on said top member and slidable laterally thereof, means for maintaining said upper bearing in its normal position, a lower bearing carried by said standard and fixed in relation thereto, a tubular member slidably mounted in the upper bearing and detachably secured to the lower bearing, a collapsible ring supported by said tubular member, a plurality of swings suspended from said ring, a leveling disc carried by said tubular member, and holding means carried by said disc and said tubular member for temporarily maintaining said ring in a position substantially normal to the axis of said tubular member.

10. An amusement device comprising a standard having a top member, an upper bearing mounted on said top member and slidable laterally thereof, means for maintaining said upper bearing in its normal position, a lower bearing carried by said standard and fixed in relation thereto, a tubular member slidably mounted in the upper bearing and detachably secured to the lower bearing, a collapsible ring supported by said tubular member, a plurality of swings suspended from said ring, a leveling disc carried by said tubular member, resilient means connecting said disc and said ring, and holding means carried by said disc and said tubular member for temporarily maintaining said ring in a position substantially normal to the axis of the tubular member.

11. A collapsible amusement device comprising a stationary standard, a two-part column carried by said standard and comprising an upper column part and a lower column part, said lower part being stationarily supported by said standard, said upper part being in substantial alignment with said lower part and rotatable therewith, a ring carried by and rotatable with said upper part, a plurality of swings carried by said ring, means for moving said upper part laterally on said standard and longitudinally thereof when collapsing the device.

12. A collapsible amusement device comprising a stationary standard, a two-part column carried by said standard and comprising an upper column part and a lower column part, said lower part being stationarily supported by said standard, said upper part being in substantial alignment with said lower part and rotatable therewith, a collapsible ring carried by and rotatable with said upper part and having two pivotally united parts, means for maintaining said ring in extended operating position, a plurality of swings carried by said ring, means for disconnecting said upper column part from said lower column part, and means for moving said upper part laterally on said standard and longitudinally thereof when collapsing the device.

13. A collapsible amusement device comprising a stationary standard, a two-part column carried by said standard and comprising an upper column part and a lower column part, said lower part being stationarily supported by said standard, said upper part being in substantial alignment with said lower part and rotatable therewith, a ring carried by and rotatable with said upper part, a plurality of swings carried by said ring, a leveling disc carried by said upper part and normally rotatable therewith, means for connecting said ring to said disc, means for disconnecting said upper part from said lower part, means for loosening said disc from its non-rotative atachment to said upper part, and means for moving said upper part laterally on said standard and longitudinally thereof when collapsing the device.

14. A collapsible amusement device comprising a standard having a top member, a rotatable tubular member carried by said standard and supported by said top member, a collapsible seat-supporting ring mounted about said tubular member, said ring being formed of two parts hingedly connected together, flexible means connecting the upper end of said tubular member to said ring to support the latter, means for rotating said tubular member, and flexible holding means carried by said tubular member and attached to said ring for temporarily steadying the same.

15. A collapsible amusement device comprising a standard having a top member, a rotatable tubular member carried by said standard and supported by said top member, a collapsible seat-supporting ring mounted about said tubular member, flexible means connecting the upper end of said tubular member to said ring to support the latter, means rotating said tubular member, a vertical holding wire having its lower end attached to a windlass, a plurality of horizontal holding wires, said horizontal wires being fastened together and to the upper end of said vertical wire, and means connecting the outer ends of said horizontal wires to said ring in spaced apart positions.

16. A collapsible amusement device comprising a standard having a top member, a rotatable tubular member carried by said standard and supported by said top member, a collapsible seat-supporting ring mounted about said tubular member, means connecting the upper end of said tubular member to said ring to support the latter, means for rotating said tubular member, a vertical holding wire mounted within said tubular member and having its upper end passing through the wall of said tubular member above said top member and its lower end emerging through the wall below said top member, a plurality of horizontal holding wires connecting together and to the upper end of said vertical wire, said horizontal wires having their outer ends connected to said ring in spaced apart positions, and means for placing tension upon said vertical and horizontal holding wires.

17. A collapsible amusement device comprising a standard having a top member, a rotatable tubular member carried by said standard and supported by said top member, a collapsible seat-supporting ring mounted about said tubular member, means connecting the upper end of said tubular member to said ring to support the latter, means for rotating said tubular member, a plurality of leveling wires connected to said ring in spaced apart positions, and resilient means carried by said tubular member and connected to said leveling wires, whereby said ring will be resiliently maintained in level position.

18. A collapsible amusement device comprising a standard having a top member, a rotatable tubular member carried by said standard and supported by said top member, a collapsible seat-supporting ring mounted about said tubular member, means connecting the upper end of said tubular member to said ring to support the

latter, means for rotating said tubular member, holding means carried by said tubular member and attached to said ring for temporarily steadying the same, a plurality of leveling wires connected to said ring at spaced apart positions, and resilient means carried by said tubular member and connected to said leveling wires, whereby said ring will be resiliently maintained in level position.

19. A collapsible amusement device comprising a standard having a top member, a rotatable tubular member carried by said standard and supported by said top member, a collapsible seat-supporting ring mounted about said tubular member, means connecting the upper end of said tubular member to said ring to support the latter, means for rotating said tubular member, a leveling disc detachably carried by said tubular member, resilient leveling means connecting said disc with said ring, and holding means carried by said disc and said tubular member and connected to said ring, whereby said ring will be resiliently maintained in level position.

20. An amusement device comprising a standard having a top member, an upper bearing mounted on said top member, a lower bearing carried by said standard, a collapsible tubular member rotatably mounted in the upper and lower bearings, a collapsible ring having permanently attached parts supported by said tubular member, a plurality of swings suspended from said ring, means for rotating said tubular member, a leveling disc carried by said tubular member, fastening means for normally securing said disc to said tubular member, resilient means connecting said leveling disc with said ring, whereby said tubular member and said ring may be collapsed when transporting the device.

21. An amusement device comprising a standard having a top member, an upper bearing mounted on said top member, a lower bearing carried by said standard, a tubular member rotatably mounted in the upper and lower bearings, means for rotating said tubular member, a collapsible ring having permanently attached parts supported by said tubular member, a plurality of swings suspended from said ring, a leveling disc carried by said tubular member, resilient means connecting said disc and said ring, and flexible holding means carried by said disc and said tubular member for temporarily maintaining said ring in a position substantially normal to the axis of the tubular member.

22. A collapsible amusement device comprising a stationary standard, a two-part column carried by said standard and comprising an upper column part and a lower column part, said lower part being stationarily supported by said standard, said upper part being in substantial alignment with said lower part and rotatably mounted in upper and lower bearings carried by said standard, a collapsible ring carried by and rotatable with said upper part and having two permanently pivoted parts, means for maintaining said ring in extended operation position, a plurality of swings carried by said ring, and means for permitting said upper column part to be moved axially in relation with said lower column part.

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