

[54] PLURAL INCLINED AXES ROUNDABOUT

[76] Inventor: **Gerald L. Barber**, 364 Mona Ln., Findlay, Ohio 45840

[22] Filed: **Oct. 13, 1971**

[21] Appl. No.: **188,899**

[52] U.S. Cl. .... **272/51, 272/29**

[51] Int. Cl. .... **A63g 1/10**

[58] Field of Search .... 272/29, 51, 37, 7, 272/28, 31, 32, 33

### [56] References Cited

#### UNITED STATES PATENTS

2,294,166	8/1942	Eyerly .....	272/51
3,140,092	7/1964	Hrubetz .....	272/37 X
2,280,643	4/1942	Courtney .....	272/51
2,847,216	8/1958	Courtney .....	272/29 X
2,203,971	6/1940	Shepherd .....	272/49 X
2,547,152	4/1951	Burg .....	272/51

#### FOREIGN PATENTS OR APPLICATIONS

838,961	6/1960	Great Britain .....	272/29
---------	--------	---------------------	--------

430,714	6/1935	Great Britain .....	272/51
2,718	2/1891	Great Britain .....	272/51
1,107,883	8/1955	France .....	272/7

*Primary Examiner*—Anton O. Oechsle

*Assistant Examiner*—Arnold W. Kramer

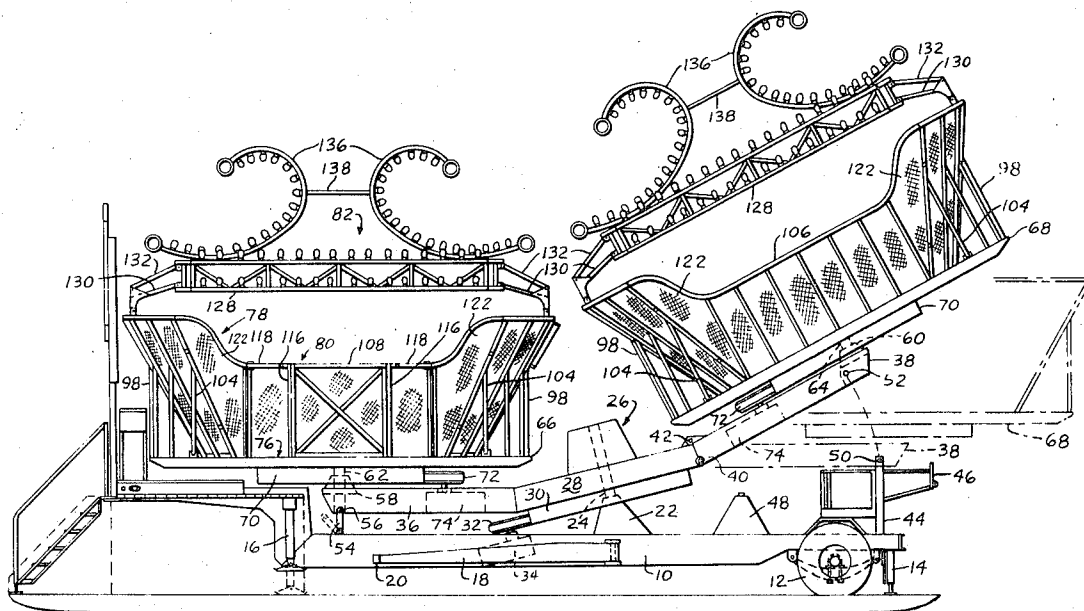
*Attorney*—Melvin A. Crosby

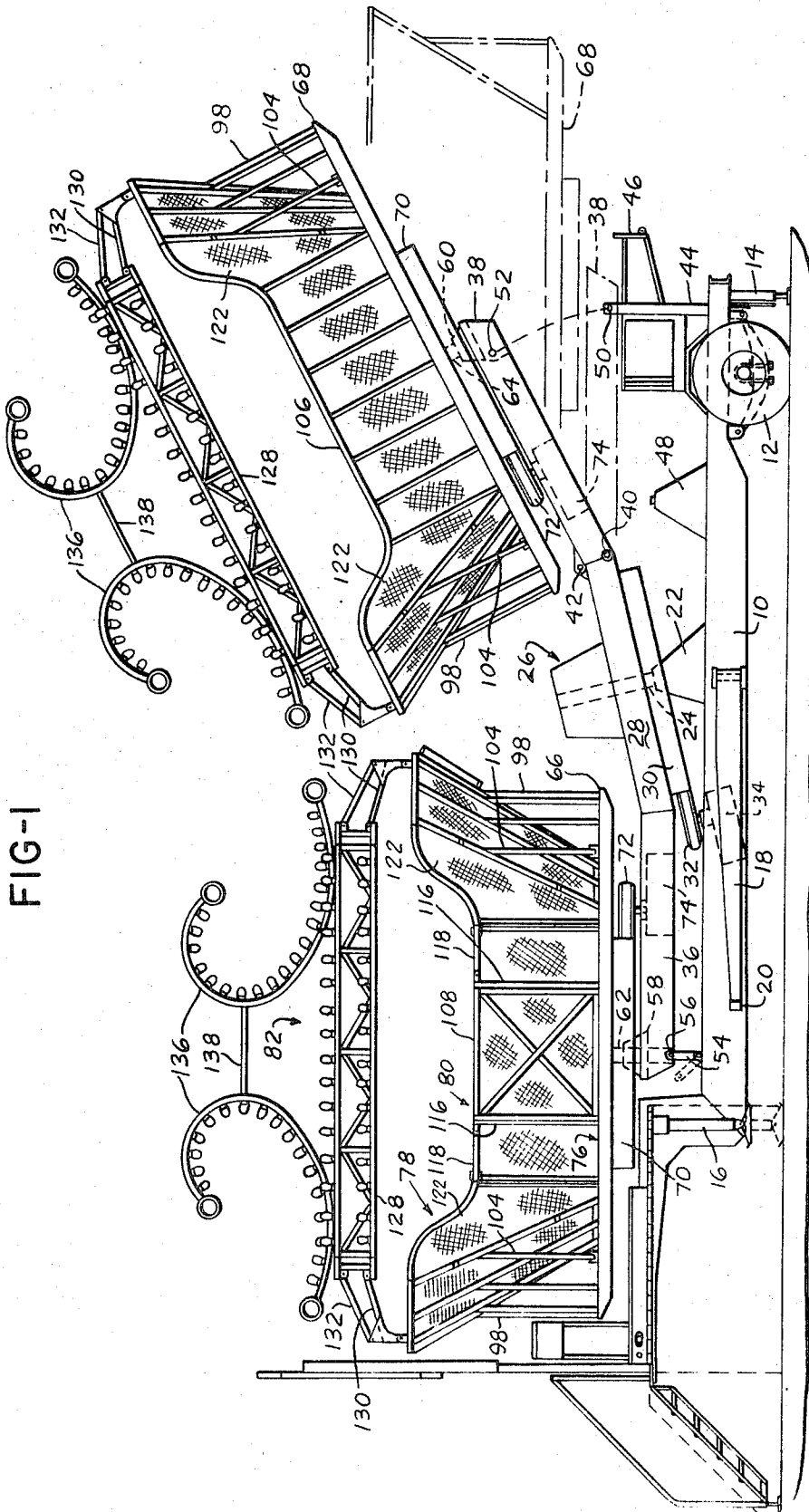
[57]

### ABSTRACT

An amusement ride in which a support arm is rotatable on a main inclined axis on a base frame which may be in the form of a trailer, and carries a pair of passenger compartments at opposite ends which are rotatable on respective secondary axes which converge in the upward direction with the main axis. The compartments are collapsible in both lateral and vertical directions for transport and the support arm is latched to the base frame in a fore and aft position for transport.

**12 Claims, 7 Drawing Figures**





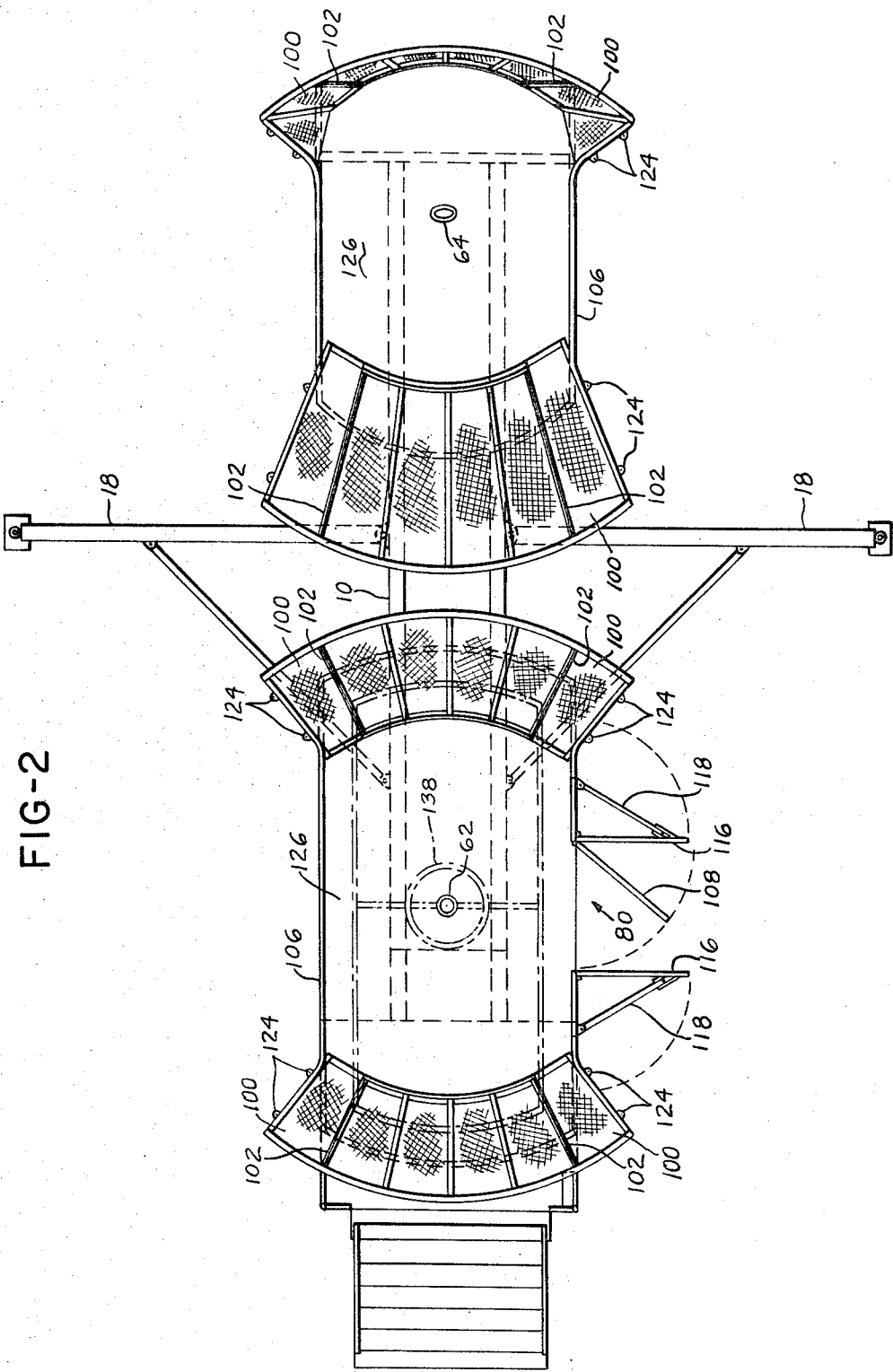


FIG-3

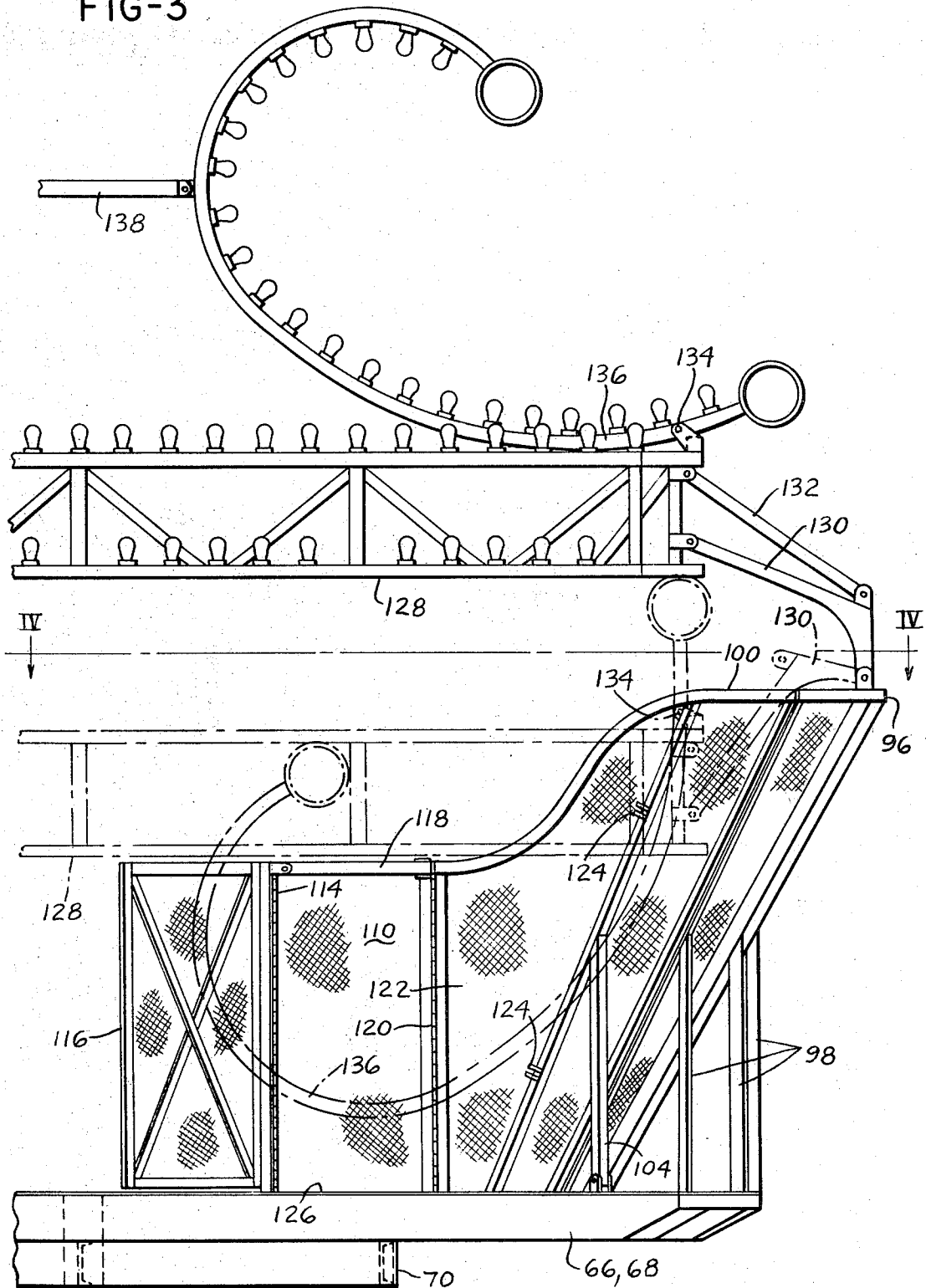


FIG-4

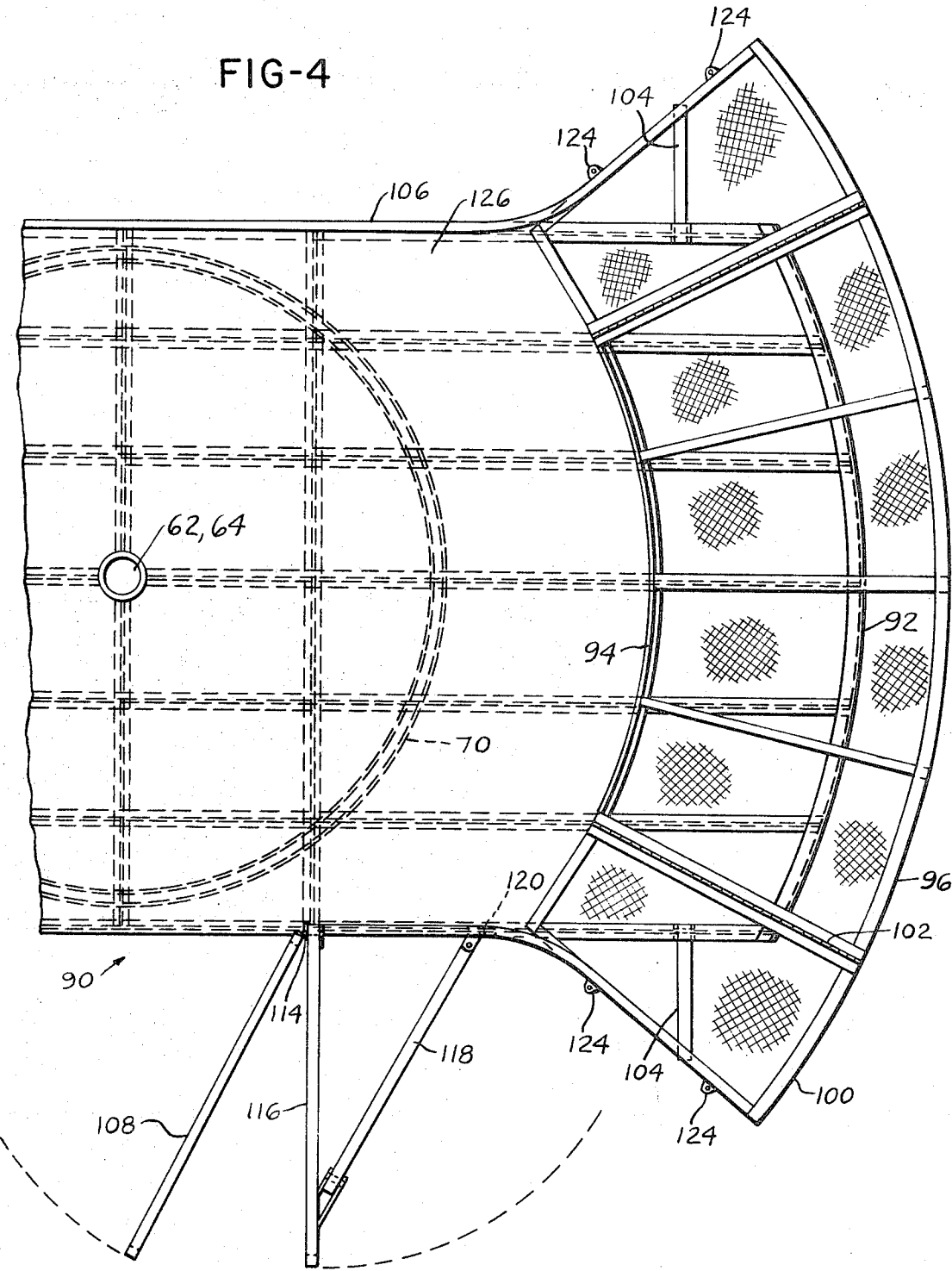


FIG-5

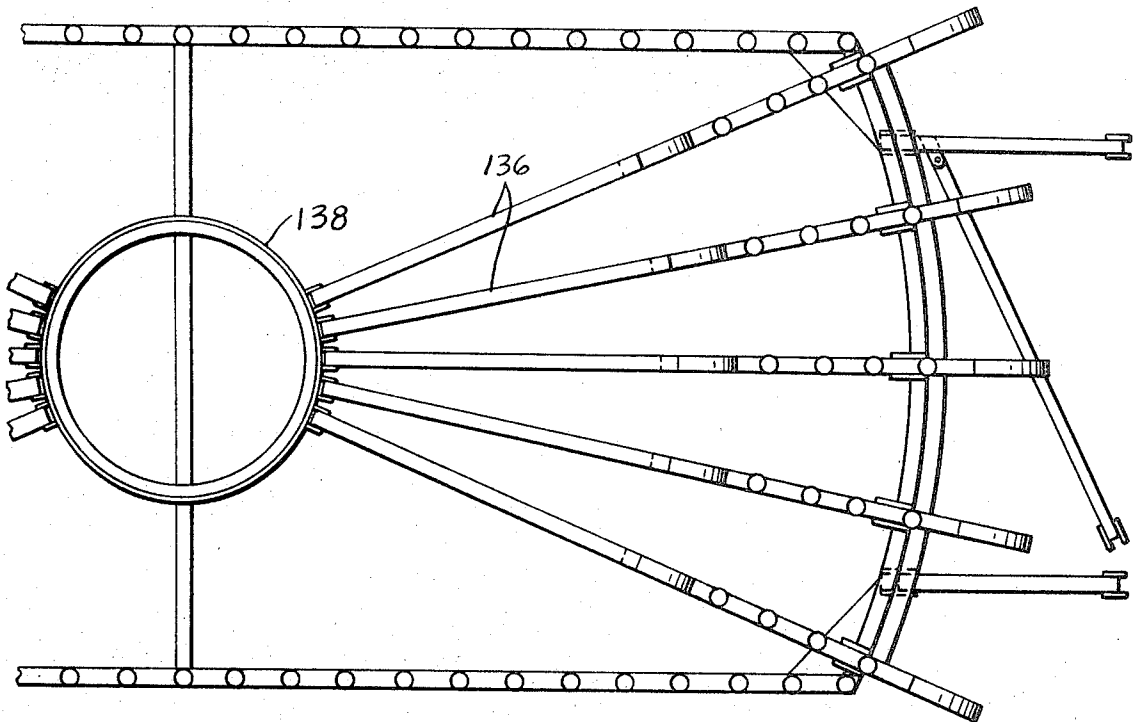


FIG-6

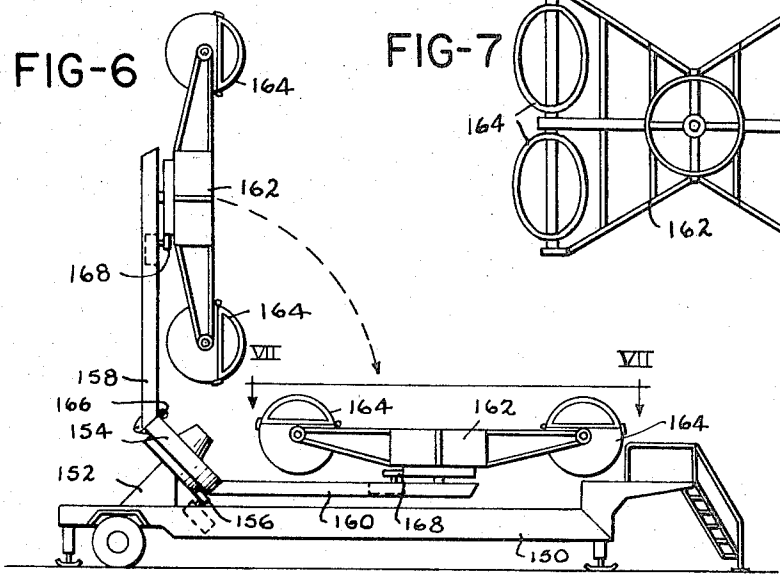
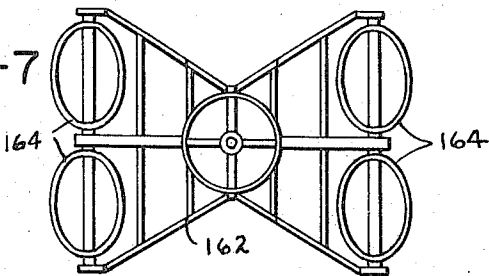


FIG-7



## PLURAL INCLINED AXES ROUNDABOUT

This invention relates to amusement rides and is particularly concerned with an amusement ride that is supported on a base frame on which it is readily collapsible for transport. The base frame may, to advantage, be a trailer type vehicle.

Amusement rides are well known and take many forms and it is characteristic that such devices must be, in most cases, readily collapsible for being transported from one location to another.

The present invention is concerned with an amusement ride of the general nature referred to of a novel type and mounted on a base frame, which may be a trailer vehicle, and adapted for being collapsed directly on the base frame so that it can quickly be prepared for transport and can quickly be set up in a new location.

A particular object of the invention is the provision of an improved collapsible amusement ride of a novel nature which is mounted on a readily portable base frame.

Another object of the present invention is the provision of an amusement ride which is relatively inexpensive to construct.

A still further object of the invention is the provision of an amusement ride which creates novel effects.

Still another object of the present invention is the provision of an amusement ride which does not employ seats or other devices of that nature for the riders thereby making the device relatively inexpensive to construct.

These and other objects and advantages of the present invention will become more apparent upon reference to the following detailed specification taken in connection with the accompanying drawings in which:

FIG. 1 is a side elevational view of an amusement ride according to the present invention.

FIG. 2 is a plan view of the ride.

FIG. 3 is a side view drawn at enlarged scale showing about half of a passenger compartment from the side thereof.

FIG. 4 is a plan sectional view, partly broken away, and is indicated by line IV—IV on FIG. 3.

FIG. 5 is a partial plan view, showing the rail structure illustrated at the top of FIG. 3.

FIG. 6 is a side view of a modification utilizing barrel-like passenger cabs.

FIG. 7 is a plan view indicated by line VII—VII on FIG. 6.

## BRIEF SUMMARY OF THE INVENTION

An amusement ride according to the present invention utilizes a base frame, which may be a trailer vehicle bed, on which a rotary structure is mounted on an axis of rotation which is inclined to the vertical. The rotating structure comprises two passenger compartments which are also rotatable on the rotating structure on axes located on opposite sides of the axis of rotation of the structure and inclined thereto so as to converge in the upward direction.

In one form of the invention, the compartments are closed cabs and in another form, each passenger compartment is in the form of a platform and is provided with a surrounding railing structure with an entrance gate so that passengers can enter and leave the respective compartment and can stand therein while the ride is in operation and during which the support structure

rotates while the compartments rotate on the support structure.

The base frame, especially when it is in the form of a trailer, is provided with ground engaging bracing elements for substantially rigid support of the base frame when the ride is set up. The support structure is adapted for being locked in place on the base frame and partially collapsed thereon to provide for minimum height of the assembly during transport while, furthermore, the passenger compartments are partially collapsible to decrease the width and height of the assembly during transport.

## DETAILED DESCRIPTION OF THE INVENTION

Referring to the drawings somewhat more in detail, the ride according to the present invention is seen in side elevation in FIG. 1, with the rotatable structure, in the form of an elongated arm, in position for operation of the amusement ride. The assembly according to the present invention comprises a trailer vehicle having a frame 10 which is more or less conventional in general configuration and at the rear end has supporting ground wheels 12 and at the front end is adapted for connection to a towing vehicle, such as a tractor, in a more or less conventional manner.

Adjacent the rear end of frame 10 of the vehicle are ground engaging pads 14 and, similarly, other ground engaging pads 16 are provided on the frame of the trailer near the front end.

The frame of the trailer also has pivoted thereto in about the middle elongated arms 18 adapted at the free outer ends, 20, to receive ground engaging pad structures. When the trailer is located in the desired site, pads 14 and 16 are lowered, and arms 18 are swung outwardly so as to extend substantially at right angles to the trailer and pads adjustably mounted thereon at 20 are adjusted into load bearing engagement with the surface on which the trailer rests.

According to the present invention, the trailer in about the middle of the length, and also centrally located transversely of the trailer, is provided with a bearing structure 22 supporting a shaft 24 on which is mounted a rotatable structure, or support arm, generally indicated at 26. The rotatable structure comprises a central portion 28 from which is dependant a drive ring 30 engaged by a drive roller 32 that is powered in any suitable manner, as by an electric motor schematically indicated at 34.

It will be noted that the axis of shaft 24 is inclined to the vertical in the fore and aft direction of the trailer so that central portion 28 of the rotary structure is also inclined in conformity with the inclination of the shaft. Extending from one side of central portion 28 is an arm portion 36 of the rotating structure fixedly secured to portion 28 and at such an angle as to be substantially parallel to the trailer frame when the rotary structure is in the position shown in FIG. 1.

At the opposite side of portion 28 is a further arm portion 38 of the rotary structure which is hingedly connected to portion 28 by hinge means 40 and is adapted for being fixed in the position illustrated by removeable pin means 42. By removing removeable pin means 42, when the rotary structure is in the position illustrated in FIG. 1, arm portion 38 can be lowered to its dot-dash position and in which position it can be introduced between and pinned to upright members 44 fixed to the trailer and also forming a support for a rack

46 adapted for receiving a demountable fence structure by means of which the assembly according to the present invention can be surrounded when it is set up for use.

Positioned beneath arm portion 38 on the trailer is a jack arrangement 48, hydraulic, for example, which can be adjusted into engagement with the underside of arm portion 38 when the latter is in transport position. Jack 48, together with pin means inserted through the apertures 50 and 52 provided in uprights 44 and arm portion 38, respectively, fixedly secure arm portion 38 to the trailer vehicle for transport.

Similarly, a latch lever arrangement 54 is provided on the trailer frame near the outer free end of arm portion 36 and can be pinned thereto by availing of holes 56 for fixedly securing the rotary structure to the frame on the trailer during transport.

Arm portions 36 and 38 are inclined relative to center arm portion 28 and each carries a bearing structure 58, 60, near the outer free end with each bearing structure supporting a respective shaft 62, 64. The shafts 62 and 64 are so arranged that their axes converge in the upward direction at an angle somewhat smaller than 45° included angle, although the specific amount of the convergence of the axes of shafts 62 and 64 can be varied.

Supported on each of shafts 62 and 64 is a passenger compartment 66 and 68, respectively, and which can be identical. Each passenger compartment has dependent from the underside thereof and concentric with the axis of the respective shaft, a drive ring 70 engaged by a respective drive roller 72 driven in rotation in any suitable manner as by an electric motor 74.

At this point, it will be apparent that by driving support structure, or support arm, 26 in rotation while simultaneously driving the passenger compartments 66 and 68 in rotation, a novel motion pattern will be imparted to the passenger compartments.

Each passenger compartment comprises, in general, a floor portion 76, an enclosing wall 78 upstanding from the floor portion, a gated entrance opening 80, and a central diametrically extending elevated rail arrangement 82 on which is mounted a plurality of lights.

A particular feature of the present invention is in the construction of the passenger compartments which are so arranged as to be extremely strong and, therefore, safe, but which can readily be collapsed to reduce the height thereof during transport and likewise being collapsible in the lateral direction so that, during transport, the passenger compartment assemblies do not project laterally from the trailer vehicle which could result in damage to the said compartments.

Each passenger compartment is made up of a floor portion comprising a plurality of I beams 90 in spaced parallel relation extending the long direction of the passenger compartment. The I beams are cut off to form rounded ends for the compartment and the ends are fixed together by angles 92 welded thereto. Inwardly from the arcuate ends of the compartment floor are other arcuate angles 94 fixed to I beams 90 so as to have one leg upstanding.

The enclosing wall for the compartment comprises a curved portion 96 at each end fixed at the bottom to the upstanding leg of the respective angle 94 and inclining outwardly therefrom in the upward direction and braced by vertical braces 98 near the extremity of the compartment floor. The entire enclosing wall of the

compartment is made up of hollow rail members, square, for example, and expanded metal extending between the rail members.

At each end of each curved portion 96, there is a short wall section 100 connected to the adjacent end of portion 96 by a hinge 102 so as to be foldable inwardly toward the longitudinal center of the compartment. Each section 100 has a brace 104 detachable at at least the lower end from the compartment floor to support the respective section in folded out position.

At the nongated side of the compartment, the wall comprises a vertical section 106 fixed to the straight side of the compartment floor. On the side of the compartment having the gate, indicated at 108, the wall comprises a pair of short wall sections 110 fixed to the adjacent straight side of the compartment floor and disposed on opposite sides of the entrance opening 80. Gate 108 is hinged by hinge 114 to the end of one of sections 110 and a pair of wing sections 116 are hinged to the opposed edges of wall sections 110 and are provided with detachable braces 118 which hold the wings in outwardly extending position but which can be disconnected to permit the wings to fold back flat against wall sections 110.

To each outer end of each wall section 110, and also at the opposite ends of wall section 106, there is hinged, by hinge 120, a further wall section 122 which fits against the adjacent side of the adjacent wall section 100, and is detachably connected thereto as by apertured lugs and pins, indicated at 124. The wall sections 122, when disconnected from wall section 100, can be swung inwardly toward the center of the compartment.

The above described hinged wall sections and the hinged wings permit the compartment to be collapsed so as to be entirely within the width of the trailer when the rotary structure is in transport position. Latch means, not shown, can be provided to lock each compartment against rotation during transport.

Each of the aforementioned drive rings may be made up of angularly arranged channel members which support a ring shaped channel member which is faced with a flat plate.

Each compartment has a floor plate 126 which extends between the curved angles 94 and the straight side edges of the respective compartment.

In an elevated position above the floor of each compartment, say, at 7 feet, there is a generally rectangular structure comprising an outer frame-like rail 128 which is supported on curved wall portion 96 by support arms 130 pivoted to both rail 128 and the wall portion. A brace arm 132 detachably connected between rail 128 and each arm 130 holds the rail in elevated position but, when removed, permits the rail to be lowered into the compartment.

Pivoted on top of the ends of rail 128, at 134, are arms 136. A ring 138 between the arms 136 holds them in elevated position but is removeable to permit the arms to pivot downwardly inside the rail. The frame-like rail 128 and the arms 136 are availed of for supporting lights. Since the passengers stand in the compartments, rails 128 can also serve as a hand grip, if so desired.

In transport condition, the walls of the compartments are collapsed as explained above while arms 136 are pivoted downwardly inside the supporting rail and the rail is moved downwardly inside the wall of the respec-

tive compartment. The compartments are, thus, collapsed in both lateral and vertical direction so the assembly will present the smallest dimensions for transport.

FIGS. 6 and 7 present a variation of the ride arrangement in somewhat schematic form. In FIG. 6 the mobile base frame of the vehicle bears reference numeral 150 and mounted thereon is a bearing support 152 inclined at an angle of 45°. Rotatable on the bearing support is a support member 154 driven in rotation as by drive pulley 156.

Extending from support member 154 at angles of 45° to the plane thereof are support arms 158 and 160 and upon each of which there is rotatably supported a cab support 162. Each cab support has passenger cabs 164 on the ends thereof for receiving passengers.

Arm 158 is advantageously hinged at 166 to the rotatable support member 154 so as to be foldable downwardly on top of support arm 160 for transport.

Each of the cab supporting arrangements 162 is preferably rotatable on its respective supporting arm and is driven in rotation by respective motorized pulley 168.

As will be seen in FIG. 7, each cab supporting structure 162 may consist of a relative open frame work with two of the said passenger compartments 164 arranged in end to end relation on each side of the center of rotation.

Modifications may be made within the scope of the appended claims.

What is claimed is:

1. In an amusement ride: a base frame, a rotary support arm rotatably supported on the base frame on a main axis inclined to the vertical, said support arm comprising a central part perpendicular to said main axis and a pair of oppositely disposed arm portions having the radially inner ends thereof connected to said central part, each arm portion inclining upwardly toward the radially outer end from a plane perpendicular to said main axis, each arm portion near the outer end having means defining a secondary axis, each secondary axis converging with said main axis in the upward direction and at the same angle with respect thereto, all of said axes being coplanar, a passenger compartment rotatably supported by each arm portion on the respective secondary axis, each said arm portion being respectively substantially horizontal in a respective one of the rotated positions of said support arm, means pivotally connecting the said radially inner end of one of said arm portions to said central part for movement thereon in the vertical plane of the respective arm portion, said one arm portion being moveable into a horizontal position when the other arm portion is in its aforesaid horizontal position, means for fixedly fastening said moveable one arm portion to said central part in the said upwardly inclined position, and means for driving said support arm and passenger compartments simultaneously in rotation on the respective axes thereof.

2. An amusement ride according to claim 1 in which said base frame is substantially rectangular when viewed from above and has a length which is several times the width thereof.

3. An amusement ride according to claim 2 in which said base frame includes stabilizer arms having the one ends pivotally connected to the base frame between the ends thereof so as to be swingable outwardly at an angle to the base frame, said stabilizer arms having sup-

port pads on the free ends adapted to engage the surface beneath the base frame to hold said base frame stationary.

4. An amusement ride according to claim 1 in which said base frame is substantially rectangular when viewed from above and is several times as long in the fore and aft direction as in the lateral direction, said arm portions being disposed in the fore and aft direction on said base frame when said other arm portion is in said horizontal position, and means for fixing said arm portions to said base frame in the said horizontal positions of the arm portions.

5. An amusement ride according to claim 4 in which said base frame includes means to lock said one arm portion in the horizontal position thereof, and a jack engageable beneath said one arm portion in the horizontal position thereof.

6. An amusement ride according to claim 4 in which said support arm in a direction at right angles to the direction in which said arm portions extend is not substantially wider than said base frame so as to be substantially confined within the lateral limits of said base frame when said arm portions are in a fore and aft position on said base frame.

7. An amusement ride according to claim 1 in which each said passenger compartment comprises a planar bottom floor member, wall means upstanding from said floor member near the edge thereof, and a gate in said wall means at one point for movement of passengers to and from said compartment means.

8. An amusement ride according to claim 7 in which the floor member of each said passenger compartment is longer in one direction than in a direction at right angles thereto, said wall means including portions inclining outwardly from bottom to top along the narrow dimensions of said floor member and substantially vertical portions along the longer dimensions of said floor member, said gate being disposed in one of the vertical portions of said wall means, the said floor member of each passenger compartment being not substantially wider in the narrow direction than said base frame.

9. An amusement ride according to claim 8 in which the terminal parts of said outwardly inclined portions of said wall means extend beyond the lateral limits of said floor member in the narrow direction of the floor member and said wall means includes wall elements connecting the adjacent ends of said inclined and vertical portions of said wall means, said wall elements being moveable to permit collapsing of said wall means substantially to within the lateral limits of said floor member.

10. An amusement ride according to claim 9 in which said wall elements include a terminal section on each end of each said inclined wall portion, and a terminal section on each end of each said vertical wall portion, adjacent ones of said sections having adjacent free edges and having the other edges hinged to the respective adjacent wall portion so as to be swingable thereon toward the center of the floor member, and means for detachably interconnecting said free edges of said sections.

11. An amusement ride according to claim 7 in which said compartment means includes a generally rectangular frame having a length to width ratio about the same as that of said floor member and disposed a substantial distance above the floor member and parallel thereto, support levers pivotally connected to the tops of said

7

outwardly inclined wall portions and extending inwardly and upwardly therefrom and pivotally connected at the inner ends to the adjacent ends of said frame, and brace means connected between said support levers and said frame holding said support levers against pivotal movement on said frame to support said frame in an elevated position, said brace means being detachable to permit said frame to be lowered into the space inside said wall means to decrease the height of said compartment means for transport.

8

12. An amusement ride according to claim 11 which includes arms pivoted at one end to the top of said frame and extending inwardly and upwardly of said frame, and a ring above said frame disposed between said arms and connected thereto to hold the arms in upright position on said frame, said ring being detachable from said arms to permit said arms to pivot downwardly inside said frame to decrease the height of said amusement ride for transport.

\* \* \* \* \*

10

15

20

25

30

35

40

45

50

55

60

65