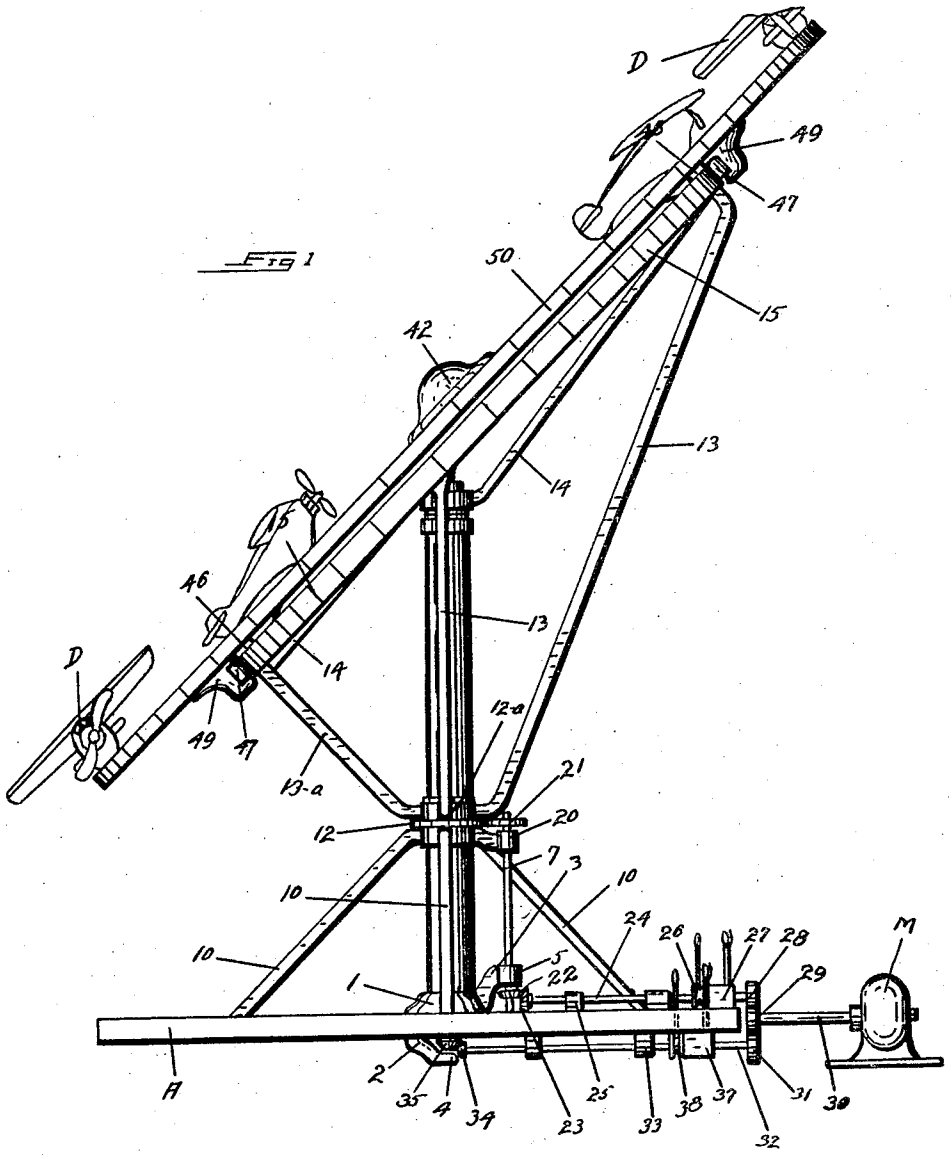
Feb. 21, 1933. A. COWIE 1,898,868

AMUSEMENT DEVICE

Filed Sept. 9, 1929 3 Sheets-Sheet 1

Fig 1



Inventor

Alexander Cowie

By R. M. Thomas

Attorney

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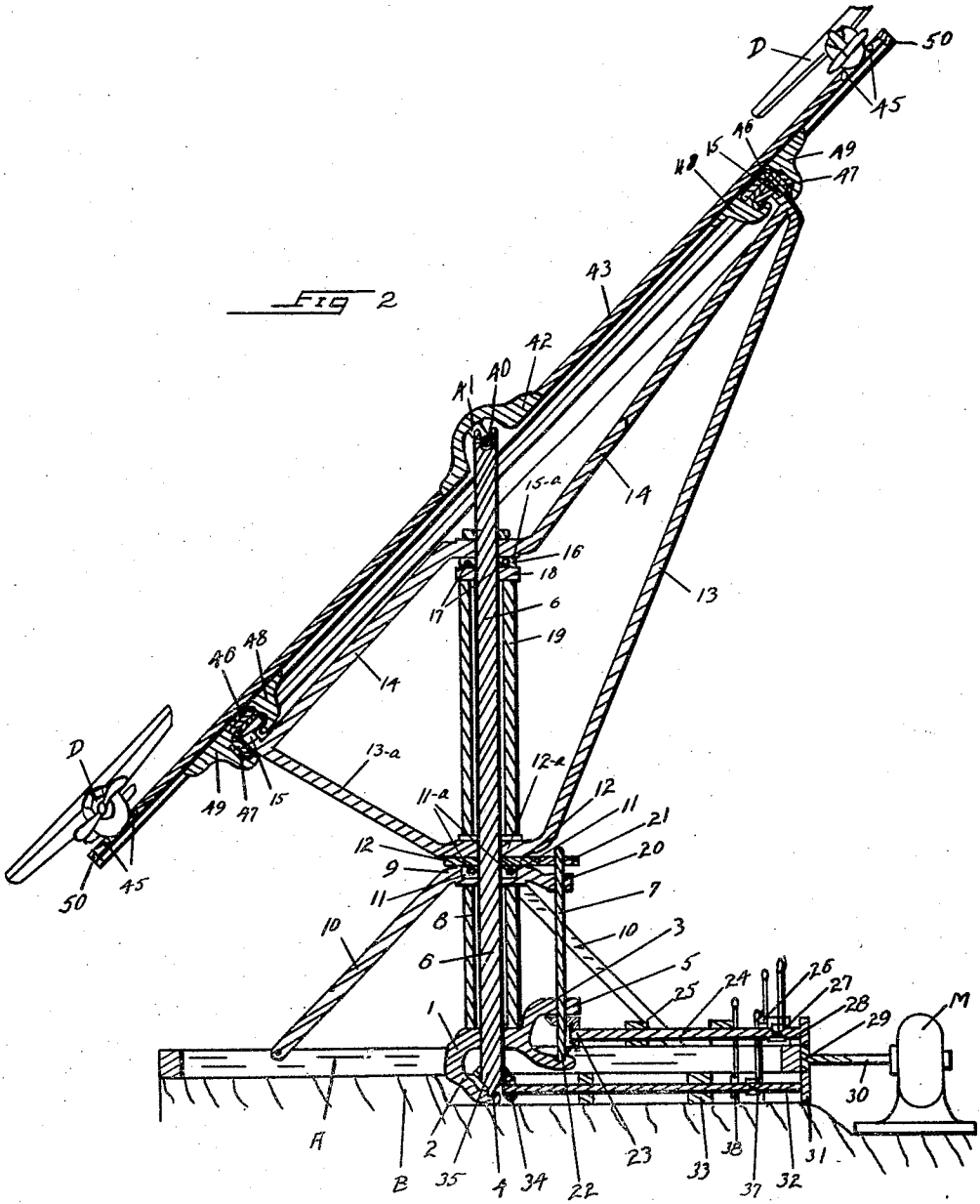
Filed Sept. 9, 1929 3 Sheets-Sheet 2

Fig 2



Inventor

Alexander Cowie

By R. M. Thomas

Attorney

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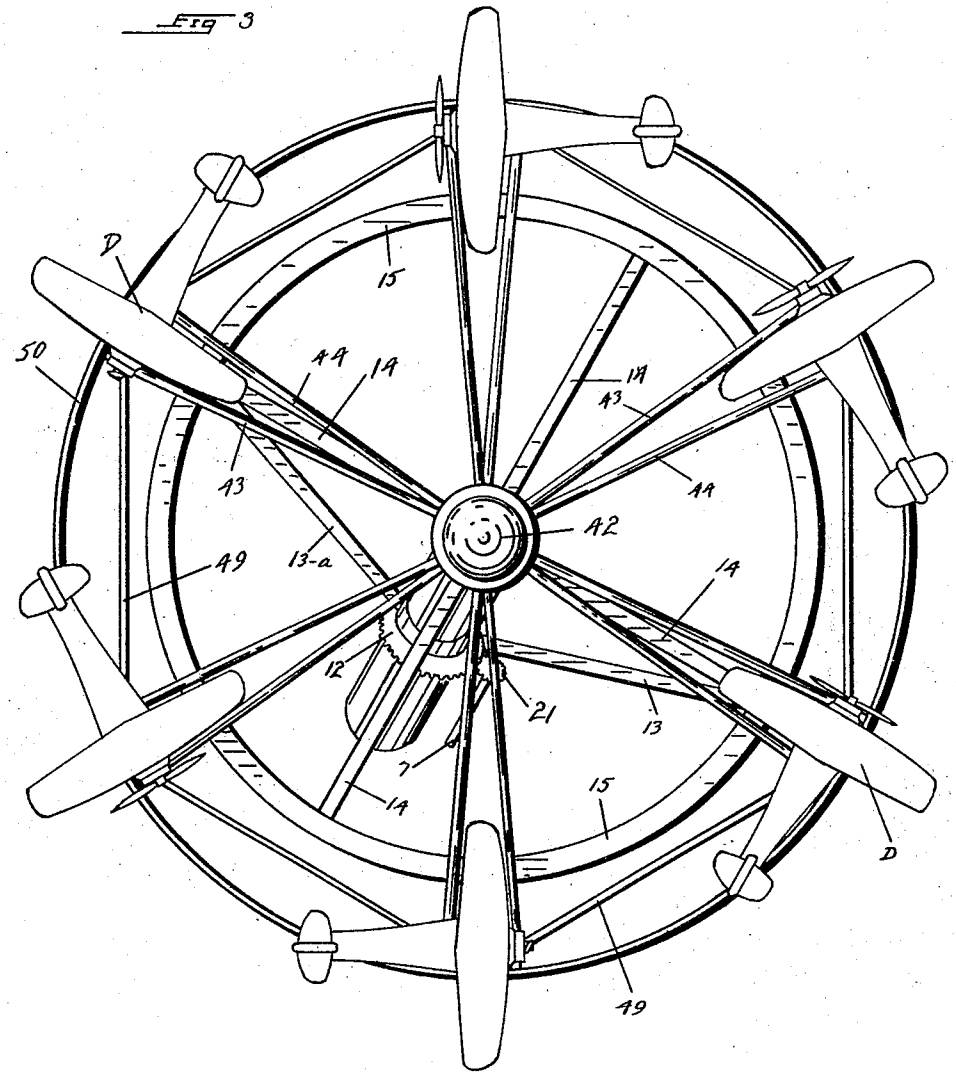
Filed Sept. 9, 1929 3 Sheets-Sheet 3

Fig 3



Inventor

Alexander Cowie

By R. M. Thomas

Attorney

Patented Feb. 21, 1933 1,898,868

UNITED STATES PATENT OFFICE

ALEXANDER COWIE, OF SALT LAKE CITY, UTAH, ASSIGNOR OF ONE-HALF TO GEORGE R. ROBERTS, OF REDONDO BEACH, CALIFORNIA

AMUSEMENT DEVICE

Application filed September 9, 1929. Serial No. 391,205.

My invention relates to amusement devices and has for its object to provide a new and efficient aeroplane ride which will give the rider all the thrills of a real aeroplane.

A further object is to provide a ride for places of amusement which will be realistic in the aeroplane movement and which will be a new motion in amusement rides which has not heretofore been accomplished with other types of amusement devices.

These objects I accomplish with the device illustrated in the accompanying drawings in which similar numerals and letters of reference indicate like parts throughout the several views and as described in the specification forming a part of this application and pointed out in the appended claims.

In the drawings in which I have shown the best and most preferred manner of building my invention Figure 1 is a side elevation of the device. Figure 2 is a section diametrically and vertically through the device. Figure 3 is a perspective plan view showing the plan of the rotating members, parts cut away.

In the drawings I have shown the base on which my device is mounted as A, and in Figure 2 a support base or floor as B. Centrally in the said base I mount a support bearing 1, which bearing is formed into two separate bearings 2 and 3 with each bearing formed into a bifurcated end 4 and 5 with the bifurcated end 4 carrying an upright shaft 6 and the end 5 carrying an upright shaft 7. On the top side of the bearing portion 2 I set a cylindrical support block 8 and above the top end of the block 8 I set a support bearing block and bracket 9 which block 9 has tripod legs 10 extending outwardly therefrom to support the bracket from all sides, and with the block 8 to support it in the center. In the top of the said bracket 9 I provide a ball race 11 having balls 11*a* therein within which race the upright shaft 6 is carried and rotated, and above which bearing I place a ring gear 12 which gear 12 is secured on the bottom side of a block or bracket 13*b*. The bottom side of the ring gear rests on the top side of the balls 11*a*. On the bracket 13*a* there are spider braces or support bars 13 which extend upwardly and outwardly to where they are joined to an annular angled ring track 15. One of the brackets 13*a* is much shorter than the bracket 13 and the other two side brackets are the same length but are longer than the bracket 13*a* and shorter than the bracket 13 thereby setting the track on an angle of approximately forty-five degrees at all times. Radial arms 14 extend from the inner edge of the track to a block 15*a* which block 15*a* is rotated around the upper end of the upright shaft 6. Just below the block 15*a* I provide a ball race 16 in which balls 17 are carried, the balls 17 being to support the block 15*a* and to allow for rotation of the shaft 6 therewithin. Below the race 16 I mount a support ring 18 and between the bottom of the ring 18 and the top side of the block 12*a* I provide a support cylindrical tubing 19 to aid in supporting the block 15*a*. The arms 14 are made similarly to the arms 13 with one short arm, two equal arms and one long arm. Should more arms be required they may be spaced in between the arms shown and made the proper length to support the ring track in its proper position.

On one side of the bracket 9 I provide a bearing block 20 which block supports the top end of the shaft 7, and on the extreme top end of the said shaft 7 I mount a pinion 21 which pinion 21 has the teeth thereof meshing with the teeth of the ring gear 12 at all times. On the bottom end of the shaft 7 between the bifurcated end of the bearing 5 I provide a bevel gear 22 which gear meshes with another bevel gear 23. The gear 23 is carried on a horizontal shaft 24 which shaft 24 is supported by suitable bearings 25 and which shaft is controlled by a brake drum 26 and a clutch 27. A gear wheel 28 is carried on the end of the clutch shaft and said gear meshes with a driving gear 29, which gear 29 is driven by a shaft 30 from a motor M, or which shaft may be driven by a belt and pulley if so desired.

Another gear wheel 31 is mounted on a shaft 32 and the gear 31 meshes with the driving gear 29 and is carried on a shaft 32 which shaft is supported by suitable bearings 33 and which shaft has a bevel gear 34 secured on the free end thereof. Another

bevel gear 35 is mounted on the lower end of the upright shaft 6 and meshes with the gear 34 to impart motion to the shaft 6 from the motor M, and a clutch 37 and brake 38 is mounted in the shaft 32 to control the motion thereof.

On the top end of the shaft 6 I provide a universal joint 40 which joint 40 has the top segment thereof formed in a dome 41 of a circular casting 42. The said casting 42 has oblique arms 43 and 44 extending therefrom on four, six, or eight different sides thereof and the said arms 43 and 44 are secured to the casting 42 with their end portions adjacent and the outer ends of the arms diverging from each other, extending beyond the track 15 and are spaced apart by bars 45. Onto the said bars I then mount my aeroplanes D which aeroplanes will each be provided with seats in which the passengers may ride. The planes are made in the usual shape of a plane either monoplane or biplane and may be made in any other form desired. On the bottom side of the front arm 43 I secure a casting 49 which casting has roller bearings 46 carried therein parallel to the arm, which bearing is adapted to roll on the top side of the track 15, and another roller bearing 47 is mounted in said casting with the axis at right angles to the bearing 46 and the said bearing 47 is adapted to engage with and rotate around the outer periphery of the angled track 15. An inwardly curved retaining bar 48 is formed on the inner side of said casting and the end of said arm is extended down and inwardly around the inner periphery of the edge of the ring 15 with the inner face of the bar 48 adapted to run on the under side of the said track to prevent the bearing from raising off from the track. A single roller is mounted on the under side of the bar 44 to support the rear of the plane on the track 15. Tie rods 49 are attached from the arms 44 to the arms 43 of the next plane to hold the outer periphery of the planes in proper position at all times and to brace them correctly and around the outer end of the arms 43 and 44 I provide a ring of metal 50 running the entire distance around the outer ends of all the rods to aid in tying the rods and arms together.

The operation of my invention is as follows:

The riders are placed in the planes and the motor started. The clutch 37 is engaged driving the shaft 32 and the shaft 6. This rotates the planes around the ring 15 without the ring changing its position and is the means of allowing the passengers to enter the planes. The planes will be lowered one at a time to the lowest position where the passengers may enter from a ladder or from a platform. After the passengers are all in the planes the planes may be rotated on the one circle giving the passengers the thrill of a climb, a bank on the top part of the circle, a nose dive on the opposite side and an imitation side slip on the lower side. The operator may then engage the clutch 27 which rotates the shaft 7 and the track 15 through the intermediate parts of the device and as the driving wheel 29 is between the wheels 28 and 31 the shafts 24 and 32 rotate in the same directions. This makes the planes move forward in one direction while the track 15 will be rotated in the opposite direction, which will give the passengers the motion of nearly a vertical drop or nose dive, a sharp bank, or side slip, a sharp climb and another sharp bank giving the passengers all the thrill of flying. The operator may then stop the shaft 32 from rotating and rotate the shaft 24. This rotates the track but not the planes. The planes will be held in one position but will rise, bank sharply, fall nearly vertically and bank sharply at the bottom. This construction and method of running the device will give the passengers nearly all the motion of a real plane in the air.

Having thus described my invention I desire to secure by Letters Patent and claim:

1. In a device of the class described the combination of spaced apart planes mounted for rotation at an oblique angle to a vertical axis to rotate therearound; a track on which said planes rotate, said track set at an angle to the horizontal plane; and means to rotate said planes or said track as desired.

2. In a device of the class described the combination of a vertical shaft, means to rotate said shaft; a set of spaced apart planes mounted pivotally on said shaft to rotate therewith; a track rotatable in the opposite direction from said planes, said track set at an angle to the vertical shaft to give the planes the simulated motion of an aeroplane.

3. In a device of the class described the combination of a track set at an oblique angle and mounted for rotation about a vertical axis; a set of planes carried on said track; means to rotate said planes or hold them stationary on said track, said rotation being in a direction opposite to the rotation of the track; and means to rotate said track or hold it stationary as desired.

4. In a device of the class described the combination of a vertical shaft mounted for rotation; a set of planes mounted pivotally to the top end of said shaft to rotate therewith; means to rotate said shaft; a track on which said planes are operated said track being set in an oblique angle to said shaft; means to rotate said track in a direction opposite to the rotation of said shaft.

In testimony whereof I have affixed my signature.

ALEXANDER COWIE.