April 9, 1935. V. W. JACOBSEN 1,996,923

MERRY-GO-ROUND

Filed July 7, 1934 2 Sheets-Sheet 1

Fig. 1.

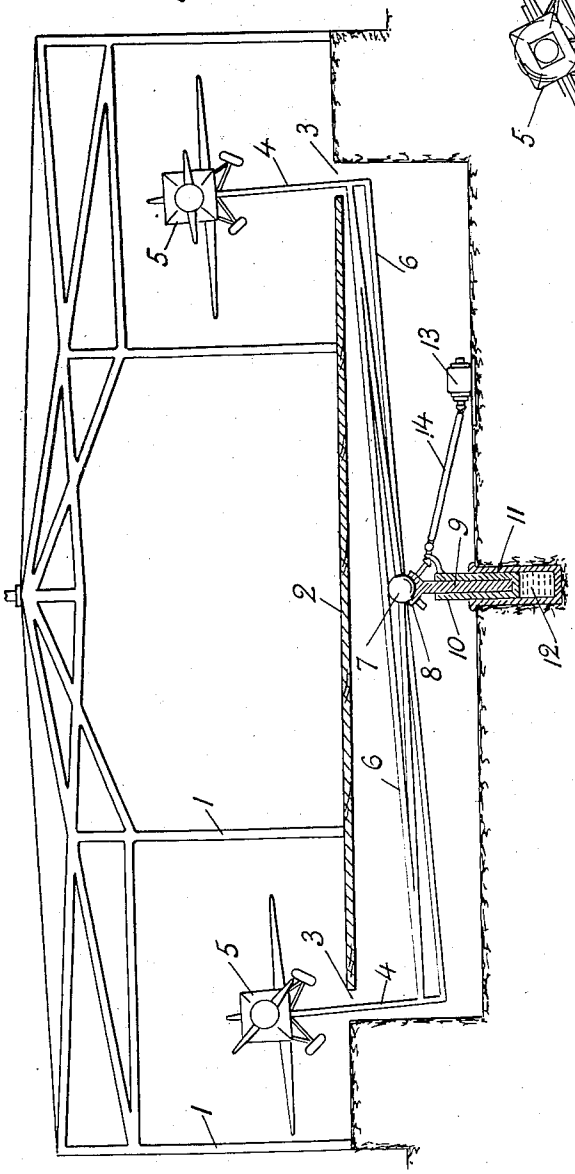
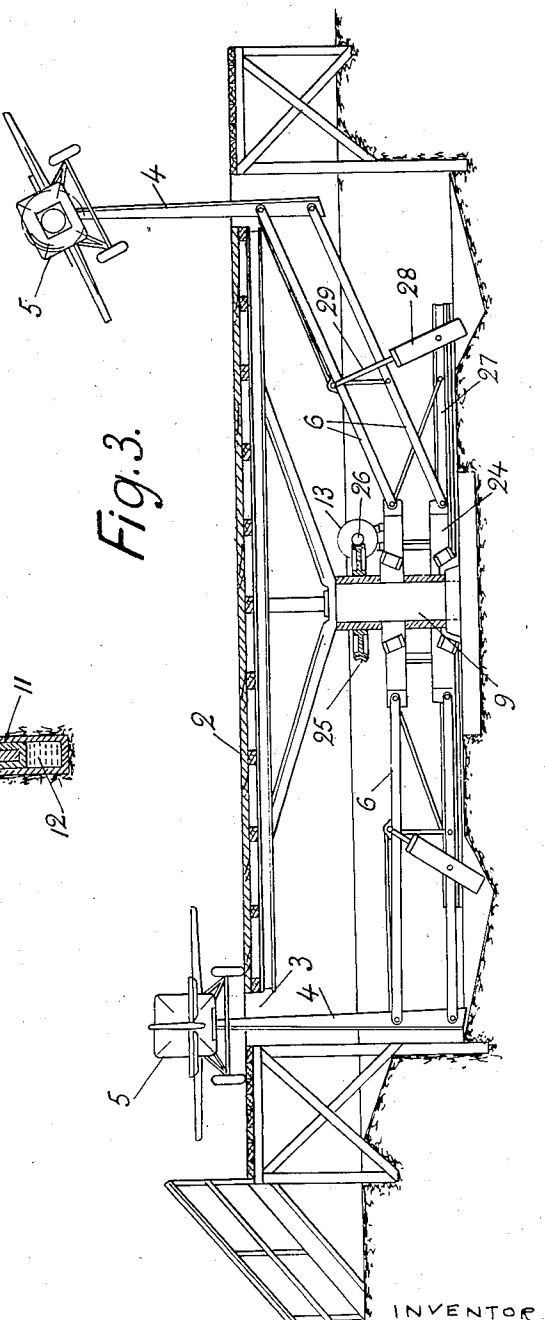


Fig. 3.



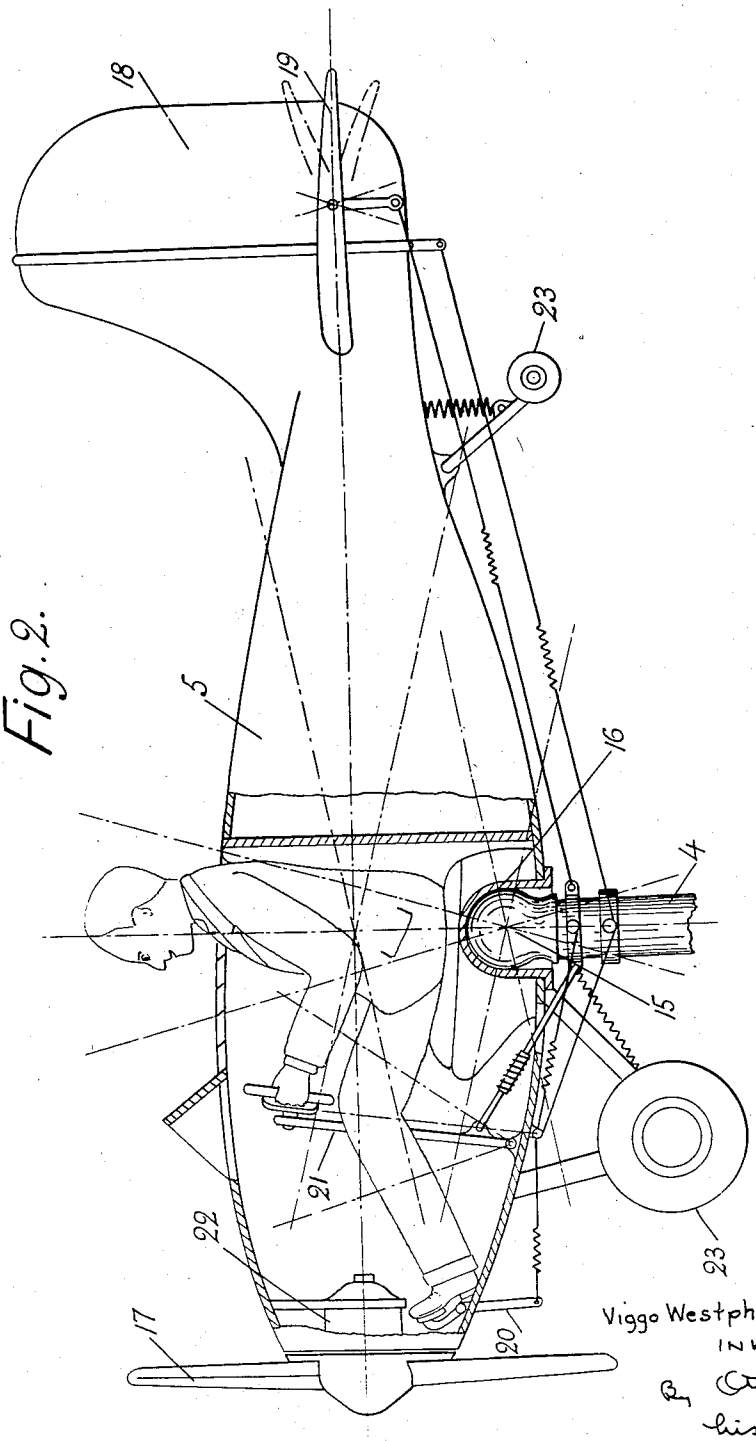
INVENTOR
Viggo Westphal Jacobsen
By Otto Munk
his ATTY.

April 9, 1935. V. W. JACOBSEN 1,996,923

MERRY-GO-ROUND

Filed July 7, 1934 2 Sheets-Sheet 2

Fig. 2.



Viggo Westphal Jacobsen
INVENTOR
By
his ATTY.

Patented Apr. 9, 1935

1,996,923

UNITED STATES PATENT OFFICE

1,996,923

MERRY-GO-ROUND

Viggo Westphal Jacobsen, Charlottenlund, Denmark

Application July 7, 1934, Serial No. 734,102
In Denmark January 20, 1934

7 Claims. (Cl. 272—28)

The invention relates to a merry-go-round of the kind having a number of gondolas in the shape of flying machines rotated in circular paths about a central vertical shaft.

The invention has for its object, in this kind of pleasure apparatuses, to produce for the public an illusion of flight and of the ability to steer the gondola as desired. For this purpose the gondolas are supported by ball links or the like on posts, which in their turn are connected to the central vertical shaft. This connection may be effected by means of a system of mainly horizontal arms, which by means of a central ball link or the like, similarly with a limited mobility, are connected to the central shaft, which may be arranged in such a manner that it can be raised by a mechanical device, preferably a hydraulic lifting device. The individual arms, however, may also each be pivoted to the central shaft and to the supporting posts, in such a manner that the individual arms may be raised separately.

The gondolas are fitted with horizontal and vertical rudders and other steering means with steering gear belonging thereto, as known from flying machines, but since the speed of the gondolas will not be sufficient to allow the steering to be effected by aerodynamic means, the steering means are connected to the supporting device of the gondolas, in such a manner that a sufficient power will be available for effecting a steering. A further advantage is to allow the horizontal rudder of the gondola to be connected to the hydraulic device, in such a manner that the passenger by operating the horizontal rudder, can cause the machine to ascend or descend, as desired.

The drawings show, diagrammatically, two constructions of the invention,

Fig. 1 showing a vertical section of a merry-go-round,

Fig. 2 one individual gondola, partly in vertical section to a larger scale, and

Fig. 3 a vertical section of another construction.

In the construction shown in Figs. 1 and 2 the merry-go-round is built as a round structure 1 with a floor 2, which along its periphery has a free circular opening 3 through which the supporting posts 4 for the individual gondolas 5 in the shape of flying machines can project. The supporting posts 4 are connected, by means of arms 6, to a ball or Cardan link 7, which can be rotated with a limited degree of mobility relatively to a spherical cup 8 at the end of a shaft 9, which is journalled in a sleeve 10, which fits as a plunger in a cylinder 11 for a pressure fluid 12. By means of a motor 13 the shaft 9 can be rotated by means of a Cardan shaft 14, in such a a manner that the connection between the motor 13 and the shaft 9 will not be cut off, even if the shaft be raised.

As further shown in Fig. 2, the supporting columns 4 terminate in a ball bearing 15, which fits in a corresponding cup 16 in the gondola 5, which as mentioned before has the shape of a flying machine with propeller 17 as well as vertical and horizontal rudders 18 and 19 with steering gears 20 and 21 belonging thereto.

In order to increase the illusion, the propeller 17 can be rotated by means of an electric motor 22 built into the gondola itself and supplied with current in a manner not shown in detail.

In the construction shown in Fig. 3, the supporting posts are pivoted to the arms 6 which preferably are shaped as a parallelogram consisting of two arms which are each pivoted to the supporting posts 4 and to supporting flanges 24 disposed on the shaft 9 which in this construction supports a worm wheel 25 engaging a worm 26 driven by the motor 13. The supporting flanges 24 are further fitted with arms 27 to which hydraulic pressure cylinders 28 are pivoted, while their piston rod 29 is pivoted to the arms 6, in such a manner that the piston rod 29 will lift the arms 6, so as to cause them to rotate about the supporting flanges 24, and will lift the supporting column 4 with the gondola 5, when pressure fluid is directed into the pressure cylinders 28. The horizontal rudder 21 of the gondola should suitably, in a manner not shown in detail, be connected to the means governing the supply of pressure fluid to the pressure cylinders 28, in such a manner that the inlet for the pressure fluid is opened when the machine is steered upward, while the pressure fluid is discharged, when the machine is steered downward.

The merry-go-round shown in Fig. 1 is used in this manner that the passengers enter into their gondolas, while the latter are resting on the floor 2, the shaft 9 being depressed entirely. When the passengers have taken their seats, the current is directed to the motors 22, in such a manner that the propellers will commence to rotate. After this the motor 13 is also started, and the arms 6 are hereby caused to rotate taking the supporting posts 4 along. Hereby the gondolas commence to roll forward on the floor on wheels 23 provided for that purpose. Then the shaft 9 is raised by pressure fluid supplied to the cylinder 11, and thereby the gondolas will be lifted from the floor. Since the suspension

of the gondolas on the supporting posts 4, as well as the suspension of the arms 6 on the shaft 9, is partly movable, the gondolas will therefore if left to themselves, occupy oblique positions, because the equilibrium is not perfect at the start, and on account of the effect of the centrifugal force. This obliquity will be further increased and maintained on account of the resistance of the air against the motion, but can be counteracted by the passenger by a suitable operation of the steering gears 20 and 21 built into the gondolas.

The construction shown in Fig. 3 operates in a corresponding manner, but here the passenger himself is able to cause the gondola 5 to lift itself from the floor, as pressure fluid is only directed to the hydraulic cylinders 28 when the horizontal rudder is operated in suitable manner.

Especially in the last form, the merry-go-round will give a good illusion of the machine actually flying and being steered. This illusion is increased materially by the circumstance that passenger himself is unable to see how the machine is supported on the supporting posts 4.

The construction shown in Fig. 3 is arranged in such a manner that the individual parts can easily be separated and loaded on to a wagon, and thus can be transported from one place to another.

I claim:

1. The combination in a merry-go-round of a central vertical shaft, vertical posts, means rotating about and connecting said shaft with the vertical posts, a seat in the form of a flying machine mounted for universal movement with respect to and upon the upper end of each of said posts.

2. The combination, in a merry-go-round of a central shaft, arms pivoted to said shaft and movable in a circular path and in a vertical plane, vertical posts carried at the outer ends of said arms, a seat in the form of a flying machine mounted for universal movement with respect to and upon the upper end of each of said posts.

3. In a merry-go-round, the combination of a central shaft, arms connected to move in a circular path and in a vertical plane with respect to said shaft, means for moving said arms relatively to said shaft, vertical posts connected with said arms, and carrying seats in the form of flying machines mounted upon the upper ends of said posts.

4. In a merry-go-round, vertical posts, moving in a circular path, a seat in the form of a flying machine, mounted for universal movement on the top of each vertical post, steering means in each flying machine connected to said post and controlling the position of the machine with respect to the post.

5. In a merry-go-round, the combination of a central shaft, means for lifting said shaft in an axial direction, vertical posts, movable in a circular path about said shaft, means connecting said posts to said shaft, and a seat in the form of a flying machine mounted on each post.

6. In a merry-go-round, the combination of a central vertical shaft, vertical posts, pivoted arms rotatable about and connected to said shaft and to said posts, said arms being movable in a vertical plane, a seat in the form of a flying machine mounted for universal movement on the top of each of said posts, and hydraulic means for lifting said seats.

7. In a merry-go-round, the combination of a central vertical shaft, vertical posts, pivoted arms rotatable about and connected to said shaft and to the posts to move vertically with respect thereto, a seat in the form of a flying machine mounted for universal movement on the top of each of said posts, hydraulic means for lifting said seats, and governing means for said hydraulic lifting means connected with and including steering gears in the form of the commonly used gears in a flying machine.

VIGGO WESTPHAL JACOBSEN.