Oct. 2, 1928. 1,686,315

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AMUSEMENT DEVICE FOR INDUCING SENSATIONS OF AVIATION

Filed Nov. 10, 1927 3 Sheets-Sheet 1

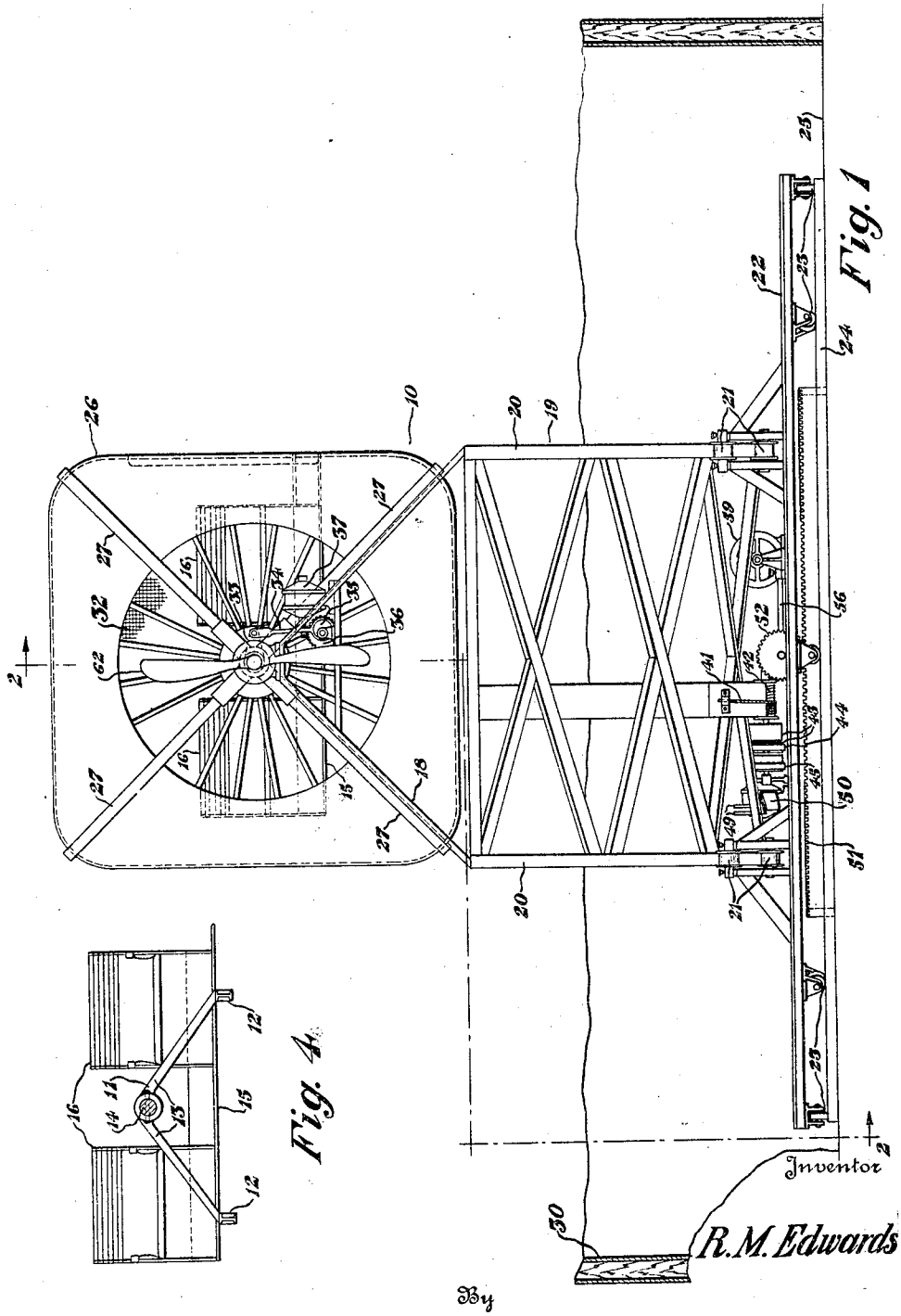

Fig. 1

Fig. 4.

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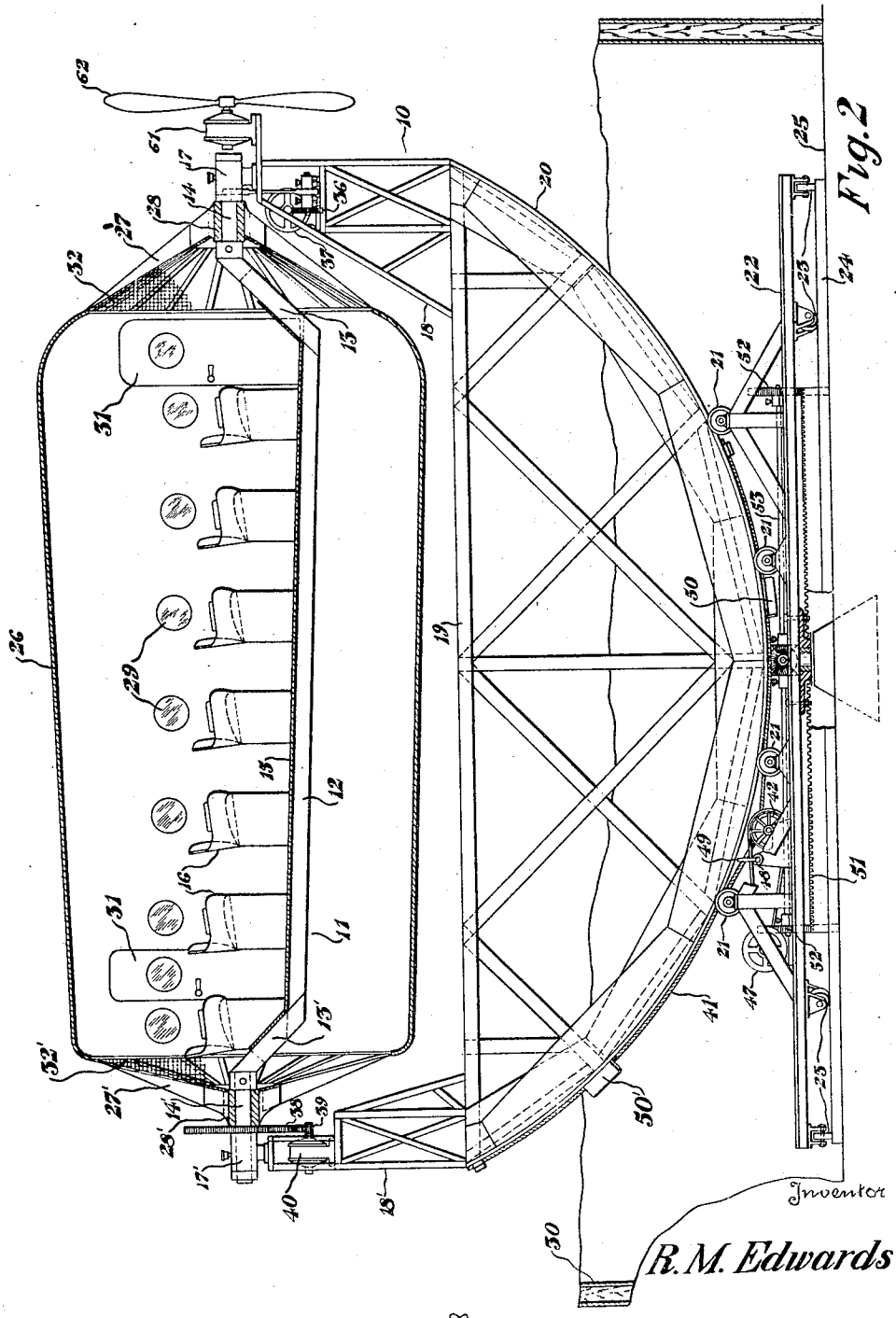

Fig. 2

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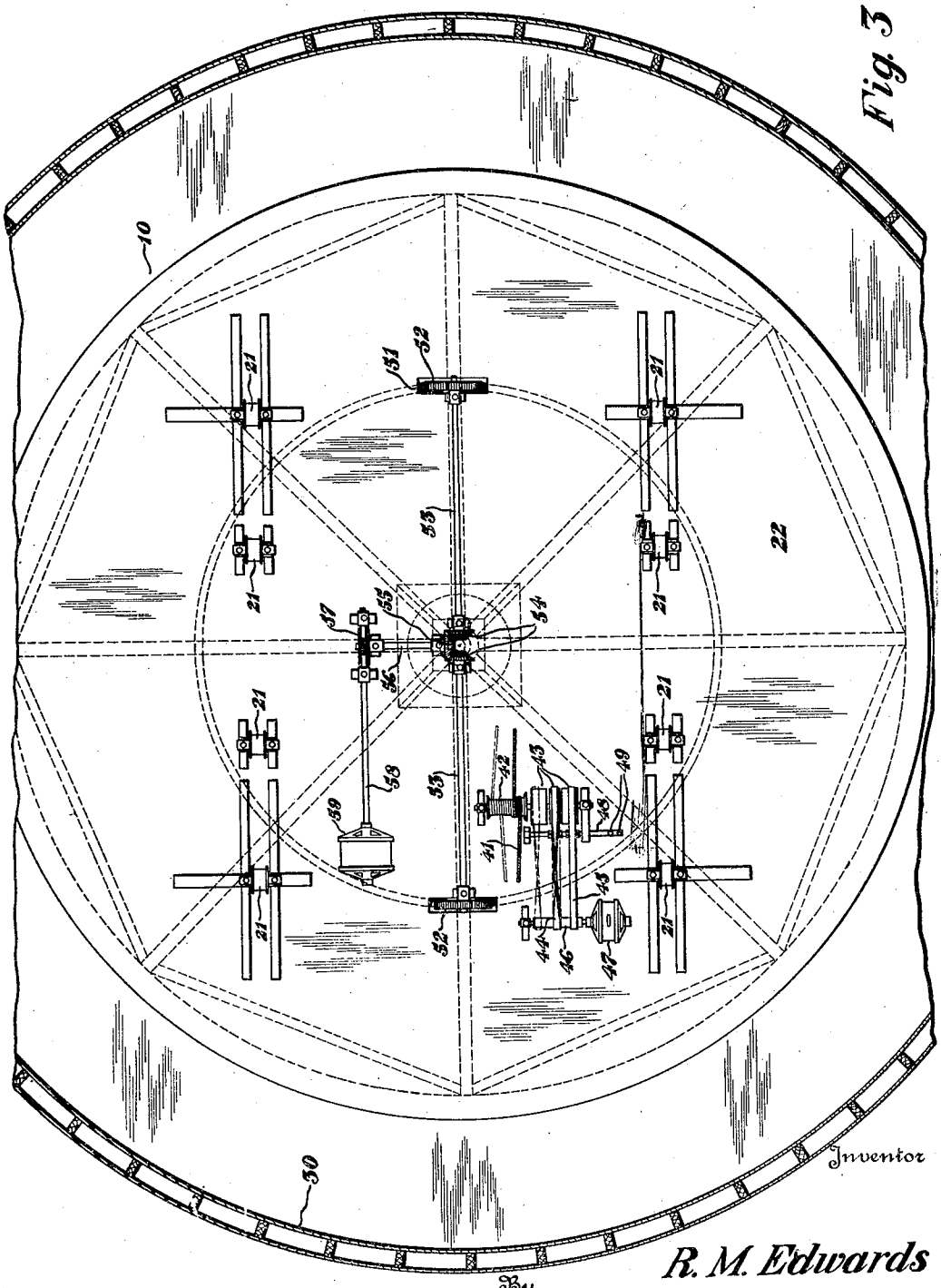
Fig. 3



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UNITED STATES PATENT OFFICE.

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AMUSEMENT DEVICE FOR INDUCING SENSATIONS OF AVIATION.

Application filed November 10, 1927. Serial No. 232,319.

The invention relates to amusement devices for use in amusement parks, carnivals, and the like, for inducing in persons subject to the actions of the devices, the various sensations of aviation, without actually flying, and without being subject to the dangers incident thereto.

The object of the present improvements include the provision of means for inducing in the persons, hereinafter termed the passengers, subject to the action of the device, the sensations of gaining altitude in an airplane or airship cabin as by spiral climbing; of banking; of the actions of the inherent forces in an airplane for maintaining lateral and longitudinal stability; of a tail spin; of a nose dive; and of coming out of the same and descending normally to the ground.

These and ancillary objects are attained by a construction and arrangement hereinafter set forth in detail, and which may be stated in general terms as including in a room having panoramic walls and ceiling, a longitudinally extending cradle having longitudinally and laterally spaced and laterally extending seats for passengers, means mounting the crade for lateral oscillation about an axis parallel with its longitudinal axis, a cabin housing including opaque walls and lens windows in the walls adapted to increase the apparent distance of the cabin housing from the panoramic walls and ceiling, the cabin housing being adapted for independent rotation about the cradle, means for oscillating the cradle about its lateral axis simultaneously with its oscillation about its longitudinal axis, and means for rotating the cradle about its vertical axis simultaneously with its lateral and longitudinal oscillations and the rotation of the cabin housing.

A preferred embodiment of the invention is illustrated in the accompanying drawings forming part hereof, in which

Figure 1 is a front end elevation of the improved amusement device for inducing sensations of aviation, portions of the enclosure therefor being broken away;

Fig. 2, a longitudinal axial sectional view thereof as on line 2—2, Fig. 1;

Fig. 3, a plan view thereof, illustrating the turn-table for rotating the cradle about its vertical axis, and operating mechanism for the device; the cradle adapted for oscillation about its longitudinal axis, and the rocker adapted for oscillating the cradle about its lateral axis, being removed; and

Fig. 4, a detached front end elevation view of the cradle.

Similar numerals refer to similar parts throughout the several views.

The improved amusement device indicated generally at 10 includes a cradle 11 preferably comprising laterally spaced longitudinally extending beams 12 connected at their forward ends by angled suspending bars 13 with a forward supporting shaft 14 and at their rear ends by angled suspending bars 13′ with a rear supporting shaft 14′.

A suitable floor 15 is laid across the beams 12 and rows of longitudinally and laterally extending seats 16 are mounted on the cradle floor for seating passengers on the device.

The supporting shafts 14 and 14′ are journalled, respectively, in bearing blocks 17 and 17′ mounted, respectively, on suitable bearing block frames 18 and 18′ at the front and rear of a rocker frame 19.

Laterally spaced longitudinally extending segmental rocker tires 20 are provided for the rocker frame 19 and are each carried by a plurality of rollers 21 suitably supported on a turntable frame 22; the turn-table frame being provided with depending wheels 23 arranged to rotate on a suitable circular track 24 resting upon the foundation 25.

A longitudinally extending tubular cabin housing 26 is provided for the cradle 11 and is preferably arranged for rotation about the cradle 11 by means of angled radially extending bars 27 and 27′ connected at their outer ends, respectively, with the front and rear ends of the housing 26 and at their inner ends, respectively, with bearings 28 and 28′ rotatable, respectively, on the shafts 14 and 14′.

The walls of the cabin housing are preferably opaque and a plurality of longitudinally spaced lens windows 29 are provided therein, the windows being adapted to increase the apparent distance from a passenger seated on the cradle 11 within the cabin housing from the walls 30 of the enclosure for the device, which walls are preferably decorated with panoramic views, not shown.

Suitable doors 31 are provided for permitting entrance into and exit from the cabin housing, the doors being reached by removable ladders or the like, not shown.

The front and rear openings of the housing are preferably provided with screen coverings 32 and 32′ for protective purposes.

A crank 33 extends laterally from the forward supporting shaft 14, and the outer end of the crank is connected by a connecting rod 34 with an eccentric 35 on the power take-off shaft of a reducing gearing 36 driven by a motor 37 for laterally oscillating the cradle 11 about its longitudinal axis.

A gear 38 is secured to the housing bearing 28′ and is meshed with a pinion 39 on the shaft of a motor 40 for rotating the tubular housing 26 about the cradle independent of the lateral oscillations thereof.

A cable 41 has its ends secured upon the rocker frame 19, and is wound intermediate its ends about a sheave 42 journalled in suitable bearing brackets mounted on the turn-table 22, and the shaft of the sheave is connected with the shaft of reversing pulleys 43 connected by suitable shifting belts 44 and 45 with a drive pulley 46 on the shaft of a motor 47 mounted on the turn-table 22.

A belt shifter 48 arranged to shift the belts 44 and 45 for rotating the sheave 42 in alternate directions, includes upwardly directed prongs 49 arranged to be engaged successively by depending angled cam plates 50 and 50′ secured on the rocker frame; so that when the sheave is turned by the motor in one direction to roll the rocker frame 19 in one direction on the rollers 21 to one extreme position, the angled cam plate 50 engaging with the prongs 49 shifts the belts 45 and 46 to reverse the rotation of the sheave 42 and thus reverse the direction of the rolling of the rocker frame, the plate 50′ similarly operating to reverse the new direction of rolling, thereby oscillating the cradle 11 about its lateral axis independent of the oscillations thereof about its longitudinal axis.

A circular rack 51 mounted on the foundation 25 is meshed with gears 52 at the ends of radially extending shafts 53 journalled on the turn-table 22.

The inner ends of the shaft 53 have secured thereon bevel gears 54 each meshed with a bevel drive gear 55 mounted on a shaft 56 driven preferably through a reduction gearing 57 by an extension 58 of the drive shaft of a motor 59 mounted on the turn-table.

A motor 61 is mounted on the forward frame 18, preferably with the shaft of the motor coaxial with the longitudinal axis of the cradle 11, the motor shaft having mounted thereon an airplane propeller 62.

The several motors 37, 40, 47, 59, and 61 are all electrically connected in a usual manner, not shown, with a power line and suitable switch boxes arranged for centralized control, whereby after the seats 16 on the cradle 11 have been occupied by passengers, the cradle 11 may be laterally oscillated about its longitudinal axis by rocking the arm 33, the housing 26 may be rotated about the cradle, the cradle may be oscillated about its lateral axis by rolling the rocker frame 19 back and forth on the rollers 21, and the turn-table 22 may be rotated to rotate the cradle 11 about its vertical axis, and all these movements of the cradle 11 may be carried out separately or any number of them combined with each other, and the propeller 62 may be rotated during these motions of the cradle to cause a blast of air to flow through the cabin housing 26.

Accordingly the passengers within the cabin housing may be subject to any of the sensations of actual flying.

Thus during the rotation of the turn-table and elevating of the forward end of the rocker frame, the sensation of spiral climbing is induced.

Lateral oscillation of the cradle induces the sensation of banking or of the "falling leaf".

With the turn-table still rotating, but the forward end of the rocker frame lowered, and the tubular housing 26 rotating about the cradle, the sensation of the tail spin is induced, which may be further increased by laterally oscillating the cradle as aforesaid.

Other combinations of the fundamental rotations or oscillations of the cradle 11, which corresponds to the fuselage of an airplane, about its longitudinal, lateral, and vertical axes, may be utilized to produce the sensations of other well known airplane maneuvers, the lens windows 29 serving to give the sensation of height during such maneuvers.

I claim:

1. A device for inducing aviation sensations and the like, including a cradle, means mounting the cradle for lateral oscillations about a longitudinal axis, means for oscillating the cradle about a lateral axis simultaneously with its oscillation about its longitudinal axis, and means for rotating the cradle about a vertical axis simultaneously with the lateral and longitudinal oscillations.

2. A device for inducing aviation sensations and the like, including a cradle, a rocker frame, and a turn-table, the turn-table being rotatable about a vertical axis, the rocker frame being supported on the turn-table for oscillation about a lateral axis, and the cradle being supported on the rocker frame for oscillation about a longitudinal axis.

3. A device for inducing aviation sensations and the like, including a cradle, means mounting the cradle for lateral oscillation about a longitudinal axis, means for oscillating the cradle about a lateral axis simultaneously with its oscillation about its longitudinal axis, means for rotating the cradle about a vertical axis simultaneously with the lateral and longitudinal oscillations, and a cabin housing rotatable about the cradle.

4. A device for inducing aviation sensations and the like, including a cradle, a rocker

frame, and a turn-table, the turn-table being rotatable about a vertical axis, the rocker frame being supported on the turn-table for oscillation about a lateral axis, the cradle being supported on the rocker frame for oscillation about a longitudinal axis, and a cabin housing rotatable about the cradle.

5. A device for inducing aviation sensations and the like, including a cradle, means mounting the cradle for lateral oscillation about a longitudinal axis, means for oscillating the cradle about a lateral axis simultaneously with its oscillation about its longitudinal axis, means for rotating the cradle about a vertical axis simultaneously with the lateral and longitudinal oscillations, and a cabin housing rotatable about the cradle, the cabin housing including opaque walls and there being lens windows in the walls.

6. A device for inducing aviation sensations and the like, including a cradle, a rocker frame, and a turn-table, the turn-table being rotatable about a vertical axis, the rocker frame being supported on the turn-table for oscillation about a lateral axis, the cradle being supported on the rocker frame for oscillation about a longitudinal axis, and a cabin housing rotatable about the cradle, the cabin housing including opaque walls and there being lens windows in the walls.

7. A device for inducing aviation sensations and the like, including a cradle, means mounting the cradle for lateral oscillation about a longitudinal axis, means for oscillating the cradle about a lateral axis simultaneously with its oscillation about its longitudinal axis, means for rotating the cradle about a vertical axis simultaneously with the lateral and longitudinal oscillations, and a stationary panoramic enclosure for the cradle.

8. A device for inducing aviation sensations and the like, including a cradle, a rocker frame, and a turn-table, the turn-table being rotatable about a vertical axis, the rocker frame being supported on the turn-table for oscillation about a lateral axis, the cradle being supported on the rocker frame for oscillation about a longitudinal axis, and a stationary panoramic enclosure for the cradle.

9. A device for inducing aviation sensations and the like, including a cradle, means mounting the cradle for lateral oscillation about a longitudinal axis, means for oscillating the cradle about a lateral axis simultaneously with its oscillation about its longitudinal axis, means for rotating the cradle about a vertical axis simultaneously with the lateral and longitudinal oscillations, a cabin housing rotatable about the cradle, and a stationary panoramic enclosure for the cradle.

10. A device for inducing aviation sensations and the like, including a cradle, a rocker frame, and a turn-table, the turn-table being rotatable about a vertical axis, the rocker frame being supported on the turn-table for oscillation about a lateral axis, the cradle being supported on the rocker frame for oscillation about a longitudinal axis, a cabin housing rotatable about the cradle, and a stationary panoramic enclosure for the cradle.

11. A device for inducing aviation sensations and the like, including a cradle, means mounting the cradle for lateral oscillation about a longitudinal axis, means for oscillating the cradle about a lateral axis simultaneously with its oscillation about its longitudinal axis, means for rotating the cradle about a vertical axis simultaneously with the lateral and longitudinal oscillations, a cabin housing rotatable about the cradle, the cabin housing including opaque walls and there being lens windows in the walls, and a stationary panoramic enclosure for the cradle.

12. A device for inducing aviation sensations and the like, including a cradle, a rocker frame, and a turn-table, the turn-table being rotatable about a vertical axis, the rocker frame being supported on the turn-table for oscillation about a lateral axis, the cradle being supported on the rocker frame for oscillation about a longitudinal axis, a cabin housing rotatable about the cradle, the cabin housing including opaque walls and there being lens windows in the walls, and a stationary panoramic enclosure for the cradle.

In testimony that I claim the above, I have hereunto subscribed my name.

RICHARD M. EDWARDS.